iPC

User Manual

10 - 2014

ESKO

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1. Preface

User Manual
for
i-cut Production Console
iPC

Note: We remind you that only the Esko staff, or persons having received appropriate training, are allowed to handle, manipulate or do repairs on the system.

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2. Change Record

Date dd-mm-yy	By	Description
18-06-2014	jhbe	First edition of this document
15-10-2014	jhbe	About Licenses chapter has been modified.

3. Welcome

Welcome to the Kongsberg i-cut Production Console User Manual.

Throughout this manual, the abbreviation iPC is used for i-cut Production Console.

This manual will provide a complete and detailed description of all iPC functions.

It is aimed for operators of Kongsberg Cutting Tables and people preparing files for such equipment.

Note: Some of the functions and equipments described in this manual are optional.

4. Using this manual

4.1 Main Sections

The manual is divided into the following main sections:

System Description

- A short-form description of the **User Interface**.
- All menues and tool bars are described one by one.

Before We Start

In this chapter, important **Basic Topics** are discussed:

- ***File Preparation***
- ***Import Presets***
- ***Cutting Keys***
- ***Registration***
- ***Configure Tools***

Workflow Description

A typical workflow is described, with detailed information about each step:

1. ***Get Started***
2. ***File Import***
3. ***Selected Job***
4. ***Prepare for Production, Manually***
5. ***Prepare for Production using Cutting Key***
6. ***Edit Production Setup***
7. ***Save a Job***
8. ***Run a Job***

Advanced Section

Optional functions for the **Advanced User** are available in the chapters:

- ***Edit Job*** - Possible modifications to the **Selected Job**.
- ***Job Alternatives*** - Additional processing alternatives available.

Backup/Restore

- How to configure a proper **Backup** regime.
- How to initiate a **Backup**.
- How to restore from **Backup**.

iPC Configuration

- Option settings, specifying the general behaviour of the system.

Appendices

- **Install Software** - a complete description on how to install iPC.
- **Keyboard Shortcuts** - a complete list of **Keyboard Shortcuts** available.
- **iPC Commands** - iPC command language.

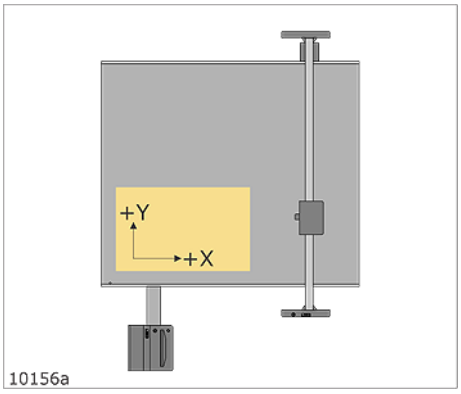
4.2 Name Styles and Symbols

Name or style	Description
Pop-up dialog	This is the dialog that appears when you click the **Right Mouse Button**.
Start button	The italic style indicates this is a button on the **Operator Panel**.
OK	The bold style indicates this is a button or function in the **Graphical User Interface** (GUI).
Machine Configuration	Link to topic.
Options->System Option	Menu selection: From the **Options** menu, select **System Option**.
HW	This symbol indicates that the function depends upon actual hardware. If hardware is not available, this functions is hidden.
	This symbol indicates that the function is license dependant.

4.3 Pictures and Illustrations

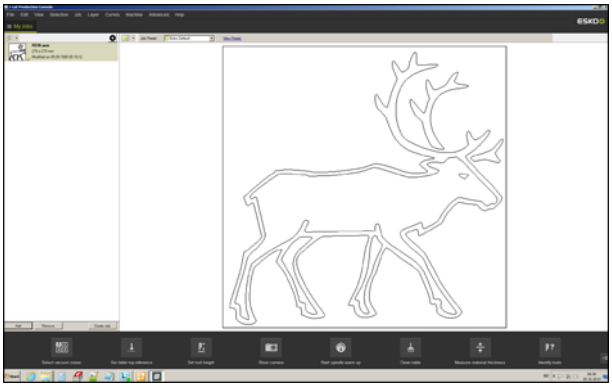
Orientation

In this document, pictures and illustrations related to the **Cutting Table** are viewed as shown here:



In the User Interface, several ***Viewing Options*** are available.

5. System Description



This chapter will explore the iPC User Interface in detail.

5.1 Font size in User Interface

Ensure your font size setting is 100%.

iPC will not work with bigger fonts.

5.2 Naming Conventions

The iPC User Interface appears in two different views, depending upon the mode you work in:

5.2.1 My Jobs View

1 - ***Main Menu***

2 - ***Job Bar***

3 - ***Select View***

4 - ***My Jobs List***

5 - ***My Jobs Toolbar***

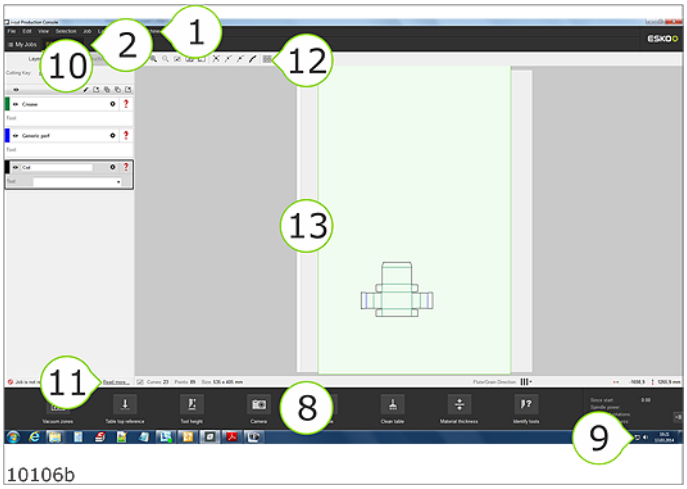
6 - ***Preview Toolbar***

7 - ***Preview***

8 - ***Machine Panel/Machine Panel Toolbar***

9 - ***Windows Toolbar*** *with* ***Machine Connection icon***

5.2.2 Selected Job View



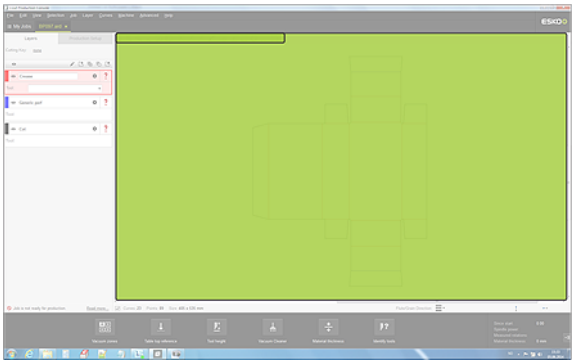
10 - ***Job Settings***. Comprises **Layers** and **Production Setup**.

11 - ***Job Properties Bar***

12 - ***Table View Toolbar***

13 - ***Table View****, see below*

5.2.3 Preview/Table View



The display area serves two purposes depending upon if you work in ***My Jobs List*** or if you work with a ***Selected Job***:

Preview

If you select a file in the **My Jobs List**, a preview of the selected file is shown.

If no file is selected, the **Preview** window is empty.

The ***Preview Toolbar*** is available at the top of the display area.

Table View

If you select a **Job** from the **Job Bar**, a preview of the **Selected Job** is shown.

The ***Table View Toolbar*** is available at the top of the display area.

5.2.4 Tool Configuration

Be aware the difference between **Tool Configuration** and **Configure Tools**:

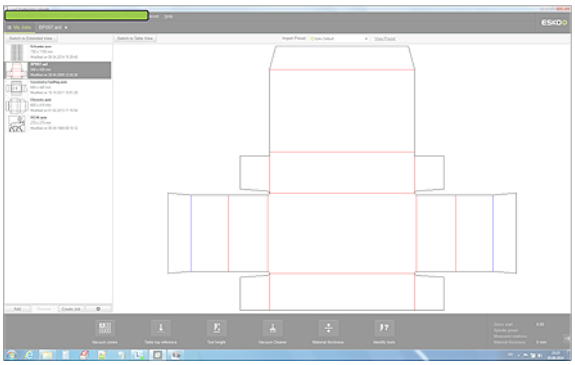
Configure Tools

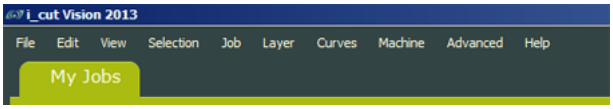
Edit **Tool Settings** to be used in a **Layer**

Tool Configuration

Maintain the **Tool Configuration** on the connected **Cutting Table**.

5.3 Main Menu





The following Main Menu entries are available:

- *File*
- *Edit*
- *View*
- *Selection*
- *Job*
- *Layer*
- *Curves*
- *Machine*
- *Advanced*
- *Help*

5.3.1 File

Main Menu->File

The following menu items are available:

New Job (Ctrl+N) Create an empty **Job**. You can add/edit geometry using the *Table View Edit* functions.	**Save Job (Ctrl+S)** Save selected **Job**. The **Job** is saved using the iPC .cut format.
Add Job... (Ctrl+O) *Open* an **Input File**, add it to **My Jobs List**.	**Save Job As (Ctrl+Shift+S)** Save selected **Job**. You are prompted for destination folder and file name.

Add Nested Layout... Open the ***Add Nested Layout*** dialog. Create a **Nested Layout** for import to **My Jobs List**	**Export** Export **Selected Job** to pdf.
Close Job (Ctrl+W) Close the selected **Job**.	**Exit** Terminate **iPC**.

5.3.2 Edit

Main Menu->Edit

The following menu items are available:

Undo (Ctrl+Z) Undo previous operation(s).	**Options** • Options settings. • Basic Configuration. • Default value settings. For more information, go *here*.

5.3.3 View

Main Menu->View

All **View** functions relates to **Selected Job** displayed in **Table View** window.

The following menu items are available:

Zoom Tool By the mouse, define a zoom area.	***Table View Orientation*** Select viewpoint for **Table View**
Zoom In **(Ctrl+Add)** Click to zoom in.	***Flute Direction*** The **Flute Direction** is indicated in the **Table View** window.
Zoom Out **(Ctrl+Subtract)** Click to zoom out.	***Reference Point***

	The selected **Reference Point** is shown in the **Table View** window.
Fit to Job **(Ctrl+Shift+J))** Selected **Job** will fill the **Table View** window.	***Table Rulers*** **Cutting Table Rulers** are shown in the **Table View** window (machine dependant).
Fit to Table **(Ctrl+Shift+T)** A picture of the **Cutting Table** including the selected **Job** will fill the **Table View** window.	***Vacuum Zones*** Selected **Vacuum Zones** are indicated in the **Table View** window.
Curve Direction An arrow on each curve indicates curve direction.	***Parking Position*** Show current **Parking Position** as a symbol in the **Table View** window.
Curve Points **Curve Points** are visible, available for edit.	***Bounding Box*** Show a **Bounding Box** surrounding **Selected Job**.
Tool Path The **Tool Path** is shown.	

5.3.4 Selection

Main Menu->Selection

All **Selection** functions relates to **Selected Job**.

The following menu items are available:

Select All Curves (Ctrl+A) In **Selected Job**, select all **Curves**.	**Deselect All Curves (Ctrl+D)** In **Selected Job**, deselect all **Curves**.

5.3.5 Job

Main Menu->Job

All **Job** functions relates to **Selected Job**.

The following menu items are available:

Rotate 90^0 CW Rotate the entire **Job**.	***Remove Double Lines and Sequence*** Use this function to remove double lines and optimize cutting sequence in a **Job**.
Rotate 90^0 CCW Rotate the entire **Job**.	***Remove Double Lines, Join Across Gaps*** Double lines will be removed. Gaps between consecutive lines that are below a certain limit will be joined.
Mirror Horisontal Mirror **Selected Job**.	***Optimize for Production...*** Opens the **Optimize for Production** dialog.
Mirror Vertical Mirror **Selected Job**.	***Move Job to Reference Point*** The lower left corner of **Selected Job** will be placed in currently selected **Reference Point**. The corner is the lower left corner of the surrounding rectangle.
	Move Open Curves to Separate Layer Use this function to separate **open curves** from **closed curves**.

5.3.6 Layer

Main Menu->Layer

All **Layer** functions relates to **Selected Job**.

The following menu items are available:

Add Layer... (Ctrl+L) Opens the ***Add Layer*** dialog.	***Copy Layer(s) with Curves (Ctrl+Shift+C)*** The currently selected **Layer(s)** are copied, geometry included.
Add Regmark Layer... Opens the ***Add Regmark Layer*** dialog.	***Remove Layer(s) (Shift+Del)*** The currently selected **Layer(s)** are removed.

Edit Layer... Opens the ***Edit Layer...*** dialog.	***Remove Empty Layers... (Ctrl+U)*** **Layer(s)** with no geometry are removed.
Copy Layer(s) without Curves (Ctrl+C) The currently selected **Layer(s)** are copied, no geometry included.	

5.3.7 Curves

Main Menu->Curves

All **Curves** functions relates to ***Selected Curve(s)***.

The following menu items are available:

Move... (Ctrl+M) ***Move Selected Curves***	**Merge Curves** ***Merge Selected Curves***
Jog Curves ***Jog Selected Curves***	**Invert Curve Direction (Ctrl+Shift+I)** ***Invert Curve Direction for Selected Curves***
Scale... (Ctrl+T) ***Scale Selected Curves***	**Lead-in/Lead-out** *Add* ***Lead-in/Lead Out*** *to* ***Selected Curves***
Mirror... (Ctrl+Shift+M) ***Mirror Selected Curves***	**Tool Offset...** *Apply* ***Tool Offset*** *to* ***Selected Curves***
Rotate... (Ctrl+Shift+R) ***Rotate Selected Curves***	**Optimize Shape** Optimize **Selected Curves** For more information, go *here*.
Edit Points Enter ***Edit Point Mode***	**Remove Curves...** *Remove* ***Selected Curves***

5.3.8 Machine

Main Menu->Machine

Functions for the connected **Cutting Table**.

The following menu items are available:

Connect Connect to **Cutting Table**	***Set Table Top Reference*** On the **Cutting Table**, execute the **Table Top Reference** wizard.
Start Spindle Warm Up On the **Cutting Table**, a **Spindle Warm Up** sequence is executed.	***Adjust Tool Height*** On the **Cutting Table**, execute the Adjust **Tool Height** wizard.
Start Vacuum Cleaner **Vacuum Cleaner** on/off control.	***Material Measurement*** On the **Cutting Table**, a **Measure Material Thickness** sequence is executed.
Identify Tools On the **Cutting Table**, execute a **Tool Identification** sequence.	***Vacuum Zones*** Select Vacuum Sections suitable for **Selected Job**.
	Direct Commands Select functions for immediate execution on the **Cutting Table**

Note: For daily use, some of these functions are easy available also from **Machine Panel**.

5.3.9 Advanced

Main Menu->Advanced

The following menu items are available:

Materials and Boards... Functions to maintain a list of available ***Materials and Boards***.	**Configure Tools...** Functions to ***Configure Tools*** to be used in **Layers**.

Cutting Keys Functions to maintain ***Cutting Keys***.	**Backup Configuration...** Initiate a ***System Backup***.
Manage Presets Functions to maintain ***Import Presets***.	**Restore Configuration...** Initiate a ***System Restore***.

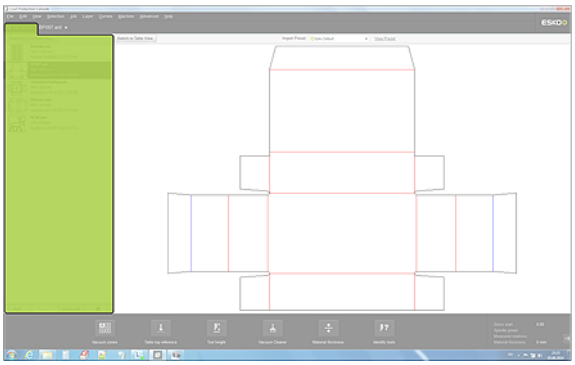
5.3.10 Help

Main Menu->Help

The following menu items are available:

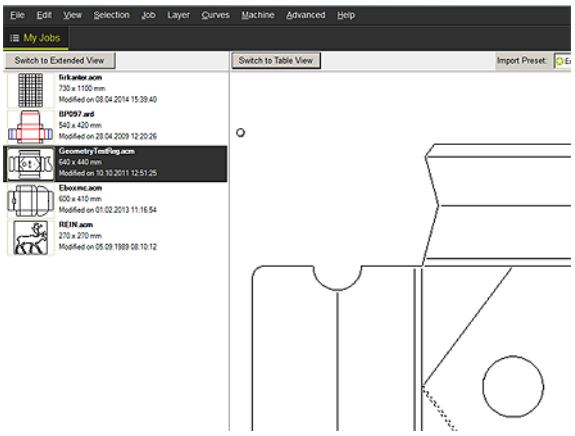
User Manuals... F1	**Knowledge base...**
i-cut Production Console User Manual online...	**Buy accessories online...**
Kongsberg table User Manual online...	**About i-cut Production Console...**
Online Support...	**License Manager...**

5.4 My Jobs List



My Jobs List is a file list showing jobs you have imported into iPC. It can be seen as a "to do" list.

While working with **My Jobs List**, the content of the **Job Preview** window appears this way:



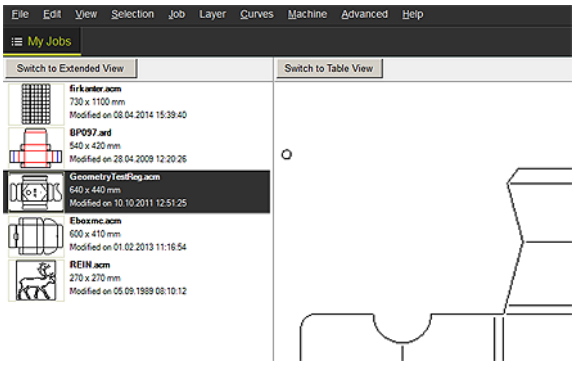
If a **Job** is selected, a preview of the Selected **Job** is shown in the **Job Preview** window.

My Jobs List is available in two different views; **Compact View** and **Extended View**, selected from:

Switch to Compact View	**My Jobs Toolbar**->Switch to **Compact View**
Switch to Extended View	**My Jobs Toolbar**->Switch to **Extended View**

5.4.1 Compact View

My Jobs Toolbar->Show My Jobs->Show List

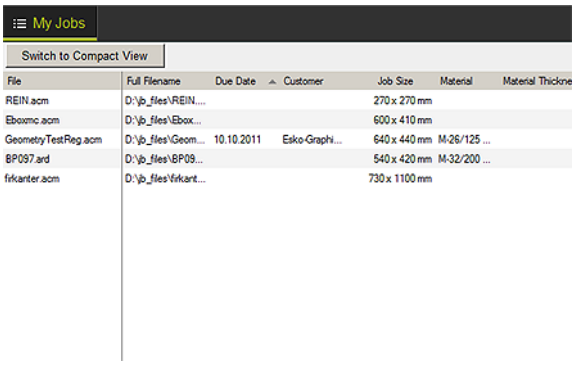


Each file is identified by an icon showing the geometry and its filename.

In addition, **Job Size** and **Last Modified** is available.

5.4.2 Extended View

My Jobs Toolbar->Show My Jobs->Show Columns



Each file is identified by it's file name.

In addition, the following columns are available:

- File name and file path
- Due Date
- Customer
- Job Size
- Material
- Material Thickness
- Design Date
- Designer Name
- Flute Direction
- Matrix - if this job require a matirx function
- Modification Date

This information (metadata) is fetched from the **Input File**.

If the information is available or not, depends upon if the **CAD system** / **Job Preparation software** used supports such data.

If a job is saved using the iPC .cut format, the metadata are stored as part of the .cut file.

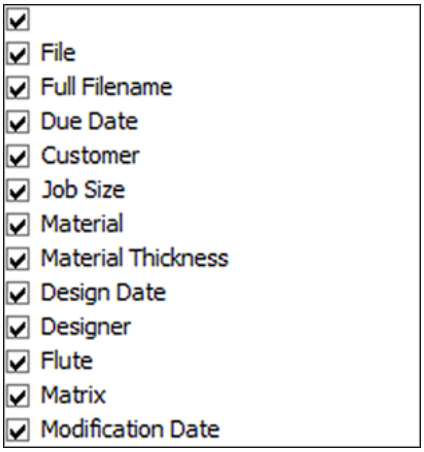
Sort by Column

Double-click a Column header will sort the file list by the column content.

Another double-click will sort the content in opposite order.

Modify Columns displayed

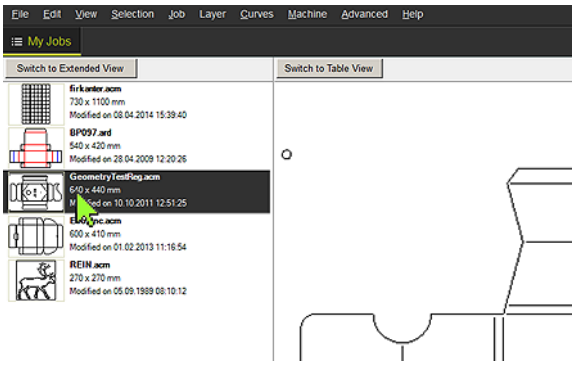
While pointing at **My Jobs List**, click the **Right Mouse Button**.



Select columns to be displayed.

5.4.3 Select a File

Select a file in **My Jobs List**



Single Click

The file is selected, available for **My Jobs Toolbar** and **My Jobs Bottom Toolbar** functions.

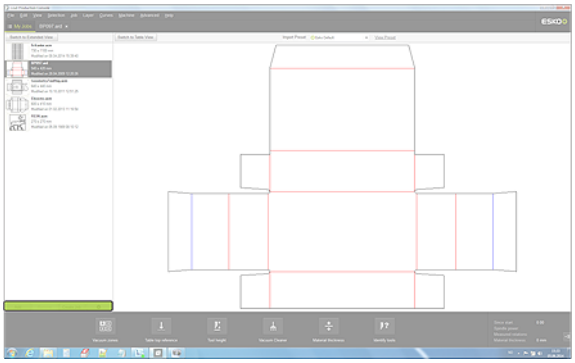
A preview of the selected file is shown in the **Job Preview** window.

Double Click

From the selected file, a new **Job** is created, shown as a separate tag on the **Job Bar**.

The same function is achieved using the **Create Job** button in **My Jobs Bottom Toolbar**.

5.4.4 My Jobs Toolbar

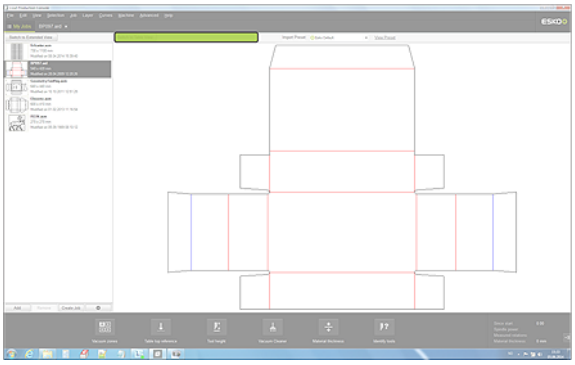


The following toolbar entries are available:

Add	Add a job to **My Jobs List**.
Remove	Remove the selected job from **My Jobs List**.
Create Job	From the selected job in **My Jobs List**, create a new **Job**. The new **Job** is shown as a separate tag on the **Job Bar**. The same function is achieved by doubleclicking the **Job** in **My Jobs List**.
	The following functions are available: **Add Job** Add a job to **My Jobs List**. ***Add Nested Layout*** Add a **Nested Layout** to **My Jobs List**. **Nested Layout** is prepared in a separate dialog. The result can be saved to **My Jobs List**. ***Edit Nested Layout*** Edit the selected **Nested Layout** **Remove Job** Remove the selected **Job** from **My Jobs List**. **Remove Unreferenced Jobs** Jobs in **My Jobs List** where the corresponding file is missing, will be removed from **My Jobs List**. **Sort Jobs** This function is available in **List View** only Sort **My Jobs List** by:

	• Added Date • Name • Modified Date • Size • Due Date • Ascending • Descending

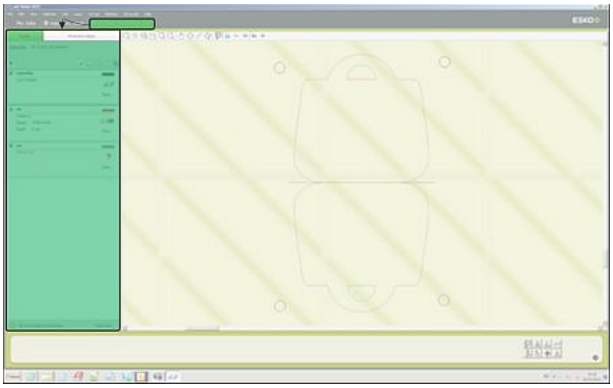
5.4.5 Preview Toolbar

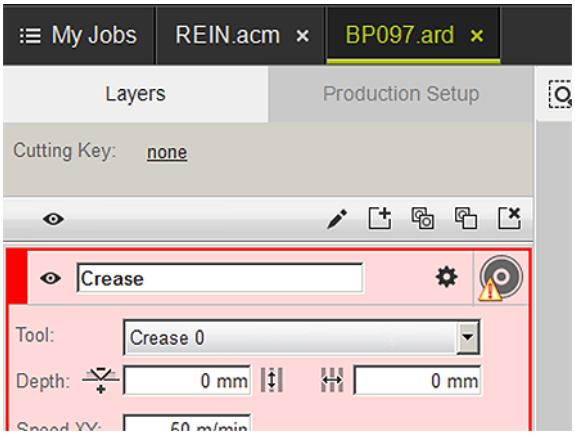


The following toolbar entries are available:

Switch to Table View	Preview of **Selected File** is shown inside a **Cutting Table** view.
Switch to File View	Preview of **Selected File** fills the window.
Import Preset: Import Preset: Esk	From the drop-down menu, select the ***Import Preset*** to use.
View Preset	Open the *View* ***Import Preset*** dialog.

5.5 Selected Job





A **Job** is identified as a separate tab including the actual file name on the **Job Bar**.

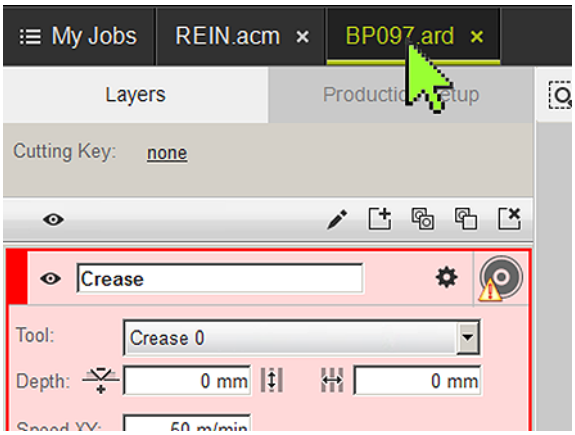
You can have several **Jobs** opened, all identified with its own tab.

You can edit a **Job** while another job is executed on the **Cutting Table**. In this way, you can prepare next **Job** for execution.

During execution, a **Job** is locked for editing.

A **Job** contains two main groups of information; **Layers** and **Production Setup**.

5.5.1 Select a Job



In the **Job Bar**, click a **Job** tag to select the **Job**.

The selected **Job** is highlighted.

A **Preview** of the selected **Job** is displayed in **Table View**.

5.5.2 Create a Job

You create a **Job** from **My Jobs List**:

	In **My Jobs List**, double-click a file.
Create Job	**My Jobs Toolbar**->**Create Job**. A new **Job** is created based upon currently selected file in **My Jobs List**.

Creating an empty **Job** is available as:

	Main Toolbar->**File**->**New Job**. A new, empty **Job** is created.

5.5.3 Close a Job

Closing a **Job** is available from:

	Main Menu->**File**->**Close Job**. Selected **Job** is closed.
	Job Bar->**Close** on the selected **Job** tab.

If the **Job** to be closed has been modified, a **Save As** dialog appears.

The **Job** will be saved in the .cut - format regardless the format of the **Input File**.

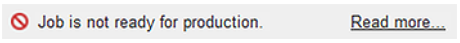
In **My Jobs List**, the new .cut file will replace previous version.

5.5.4 Ready for Execution

To prepare a **Job** for execution, complete **Layers** and **Production Setup**.

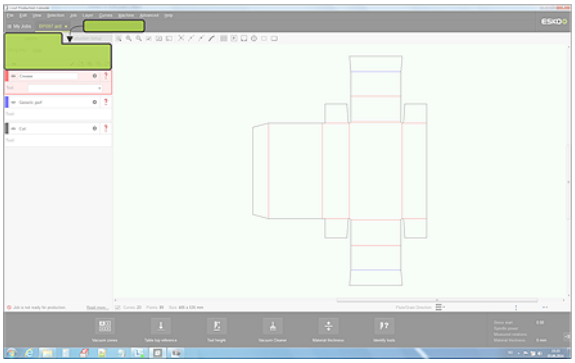
To simplify this task, use **Cutting Keys** as described in next chapter.

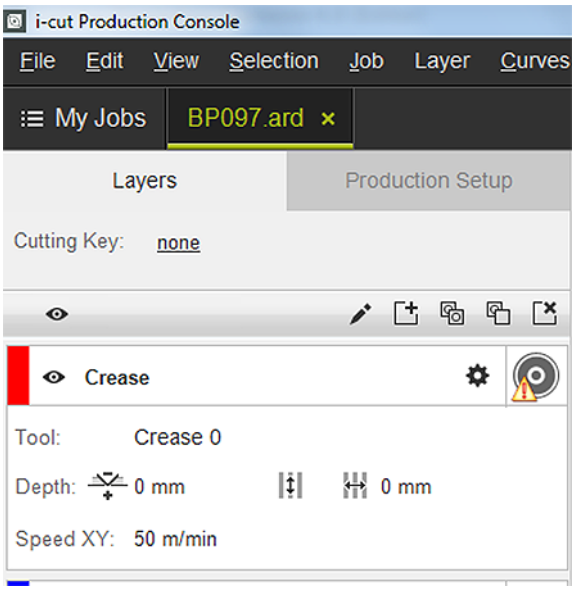
In the **Selected Job Status Bar**, you find the status indicator for **Job** ready:



	The **Production Settings**; **Layers** and **Production Setup**, are properly set. The **Job** is ready for execution.
	This **Job** is not properly prepared for execution. For information about what is missing, click **Read More**...
	Click to get information about missing **Production Settings**.

5.6 Selected Job, select Cutting Key

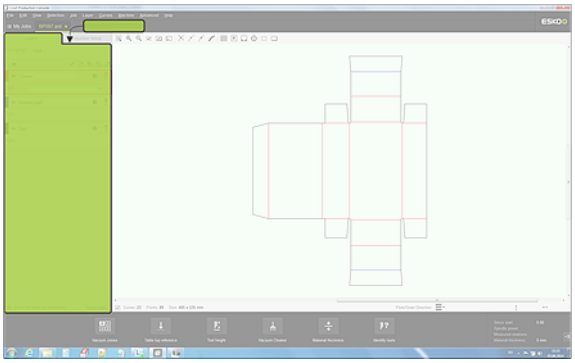




After a new job is created, no **Cutting Key** is selected, unless it is specified in the selected **Import Preset**.

Cutting Key:	Leave **Cutting Key** = None to run *without using **Cutting Key***. Press none to open the ***Cutting Key** selection dialog*

5.7 Selected Job, Layers



iPC organizes all geometry and registration data into **Layers** and assigns a unique set of options to each layer.

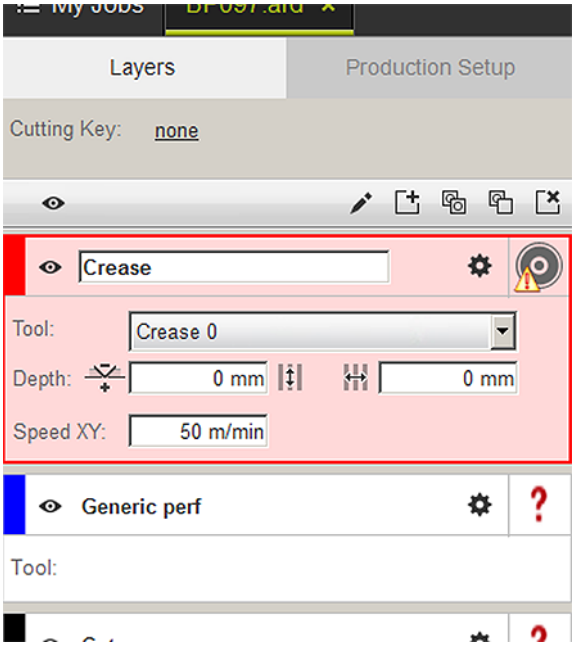
When importing a file, iPC separates the contents into **Layers**.

The separations are defined by the *Import Mapping*.

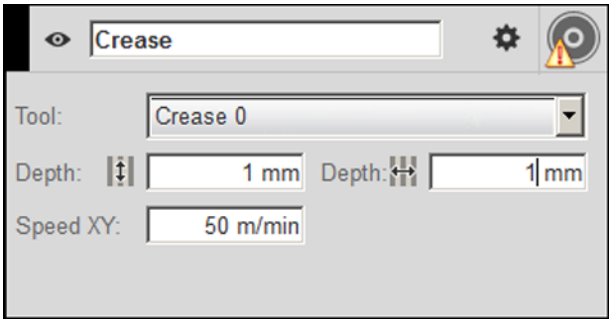
Layers defines tools, tool parameters and registration types.

When you run a job, iPC will produce that job based on the order, selection and configuration of your **Layers**.

All **Layers** are located in the **Job Settings** section of **Selected Job**:



5.7.1 Layer Window

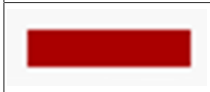


A sub-set of tool parameters are displayed in the **Layer Window**.

The number of parameters will change, depending upon the actual tool selected.

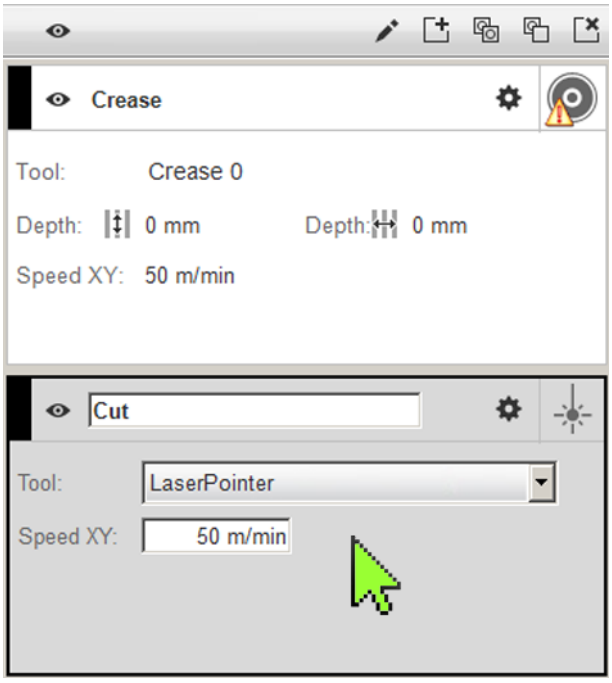
	Invoke the ***Edit Layer*** dialog. All **Layer** parameters are available for edit.

	Indicates if this **Layer** is visible, and thereby included or not, see ***Include a Layer***.

	Select Tool to be used for this **Layer**
	**Color** used when the **Layer** geometry is displayed in **Table View**. Click to open the **Color Selection** dialog.
	Tool Icon showing the tool currently assigned to this **Layer**. The **Tool** is mounted on the **Cutting Table**.
	Tool Icon showing the tool currently assigned to this **Layer**. The **Tool** is currently not mounted.
	No **Tool** is currently selected for this **Layer**. Use the **Select Tool** function to specify tool to use.

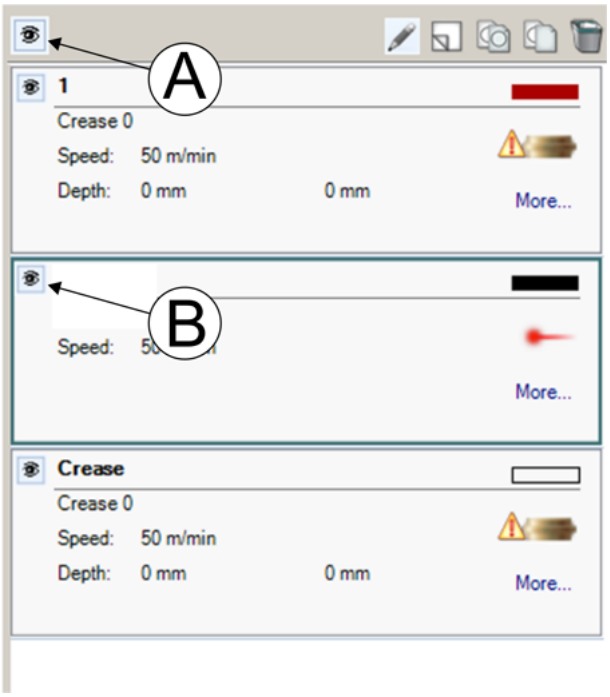
5.7.2 Select Layer

A **Layer Window** is selected by a **Mouse Click** inside the surrounding frame:



A selected **Layer** is identified by a highlighted frame.

5.7.3 Include a Layer



A - Include/exclude all **Layers**

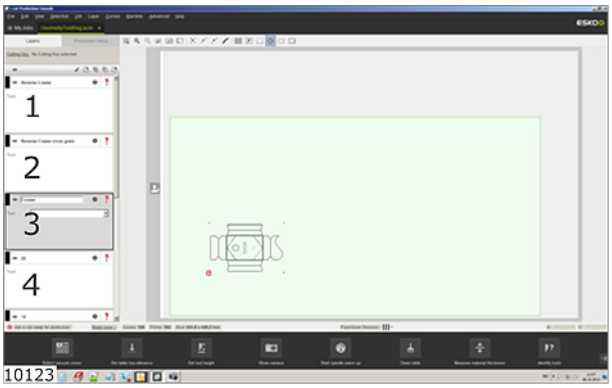
B - Include/exclude this **Layer**

Click the button to change state:

	Layer is included in **Selected Job**. The geometry belonging to this **Layer** is visible in **Table View**. The geometry belonging to this **Layer** will be included in the output processing.
	Layer is excluded. The geometry belonging to this **Layer** is not visible in **Table View**. The geometry belonging to this **Layer** will not be included in the output processing.

5.7.4 Layer Sequence

The execution sequence on the **Cutting Table** is determined by the **Layer** sequence, starting from the top of the list.

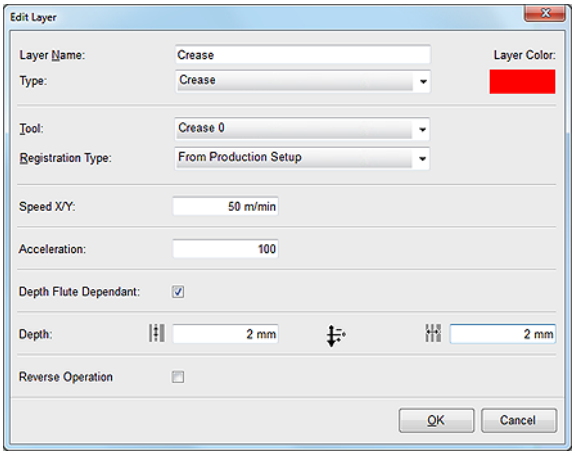


You can re-arrange the execution sequence by moving **Layers** up or down:

1. Select the actual **Layer**.
2. While you keep the **Left Mouse Button** down, move the **Layer** up or down.
3. When at wanted position, release the **Left Mouse Button**.

5.7.5 Edit Selected Layer

	Selected Job->Layers->Edit Layer
	Main Menu->Layer->Edit Layer



The content of the **Edit Layer dialog** will change depending upon **Tool selection**.

For **Milling tool** parameters, go *here*

Layer Name

Enter the name you want for the **Layer**.

Depth, Flute Dependant

If enabled, you can specify **Depth Across** and **Depth Along** flute independently.

The original name is derived from the input file and the **Import Mapping**.	
Depth Along Specify cutting/creasing depth along flute direction. The value can be entered as: • xx mm • xx in • xx %	**Depth Across** Specify cutting/creasing depth across flute direction. The value can be entered as: • xx mm • xx in • xx %
Layer Type Select ***Layer Type***.	**Tool** From the drop down list, select the tool to use when this **Layer** is processed. Note: Tools above the horisontal line are currently available on the machine.
Registration Type From the drop down list, select the wanted **Registration Type**. For details, see ***Registration***.	**Reverse Operation** Specify if this **Layer** should be executed on the reverse side of the sheet.
Speed X/Y Specify the execution speed for this **Layer**.	**Acceleration** Specify the acceleration to be used as a % - value of maximum acceleration available.
Layer Color Select the color to use when this **Layer** is displayed in **Table View**. Press the **Layer Color** bar to open the Color dialog.	

5.7.6 Layer Types

Layer Types are used by **Cutting Keys** and some **Advanced Job** menu features.

Layer Type is a property of a **Layer** typically defining which operations (cut, crease, etc) to perform on a layer.

Layer Type is assigned a layer in the **Import Mapping** based on certain properties in the input file, like layer name, color or linetype.

Some design applications can also define the **Layer Type** directly.

Alternatively the **Layer Type** can be selected in the Edit layer dialog.

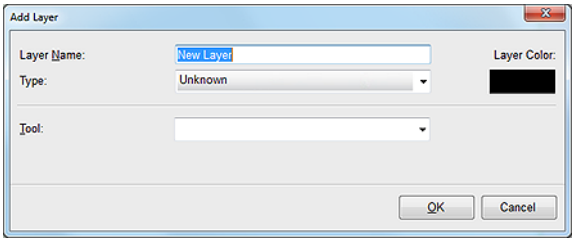
Layer Types

The following **Layer Types** are available:

- Unknown
- **Cut**
- **Crease**
- **Partial Cut**
- **Perf Cut**
- **Bevel Cut**
- **V-notch**
- **Plot**
- **Kiss Cut**
- **Drill**
- **Regmark**
- **Braille**
- **Crease across grain**
- **Reverse Crease**
- **Reverse Crease cross grain**
- **Wash Out**
- **Engraving**
- Free use 1, 2,3

5.7.7 Add new Layer

	Main Menu->Layer->Add Layer
	Selected Job->Layers->Add Layer



Note: Do not use this entry to create a **Regmark Layer**.

Layer Name

Enter the name you want for the **Layer**.

Layer Type

Select ***Layer Type***.

Tool

From the drop down list, select the tool to use when this **Layer** is processed.

Note: Tools above the horisontal line are currently available on the machine.

Layer Color

Select the color to use when this **Layer** is displayed in **Table View**.

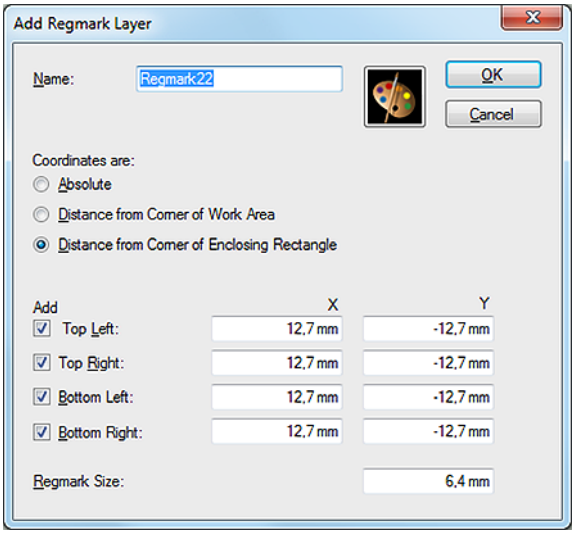
Press the **Layer Color** bar to open the Color dialog.

The **Add Layer** dialog box will change depending upon the **Tool** selected.

To fill in the other parameters for the **Layer**, see ***Edit Layer***.

5.7.8 Add Regmark Layer

Main Menu->Layer->Add Regmark Layer



Normally, the position of the **Registration Marks** is included in the **Input File**.

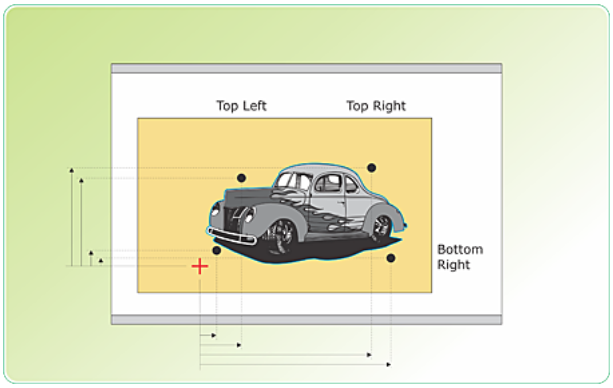
If, for any reason, you have **Input Files** without **Registration Mark** information, you can use the **Regmark Layer** to specify the size and position of **Registration Marks** relative to the corners of the job.

Note: **Registration Marks** created this way are always circular.

Name

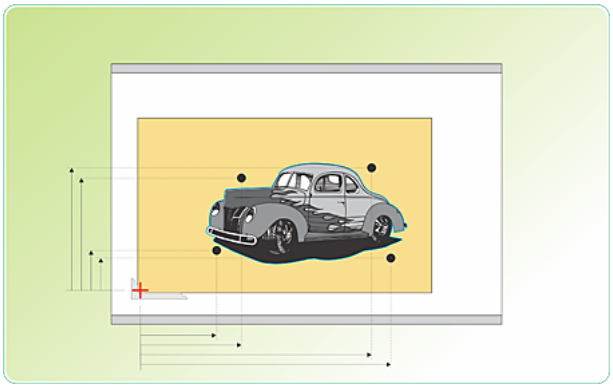
Enter the **Name** you want for the **Layer**.

Coordinates are Absolute



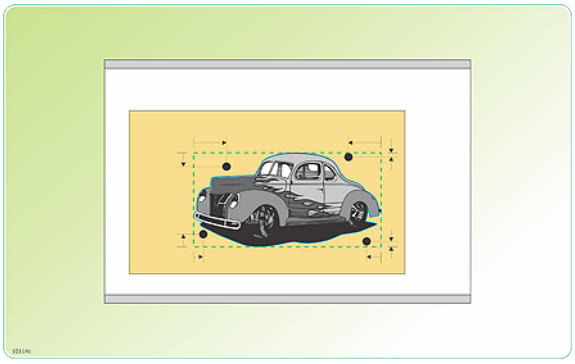
The coordinates for the **Registration Marks** are specified in the same coordinate system as the geometry.

Coordinates are Distance from Corner of Work Area



The coordinates for the **Registration Marks** are relative to corner of the **Work Area**.

Coordinates are Distance from Corner of Enclosing Rectangle



The coordinates for the **Registration Marks** are relative to the corner of the enclosing rectangle.

Top Left

Select if a top left **Registration Mark** should be used.

Top Right

Select if a top right **Registration Mark** should be used.

Enter coordinates for the **Registration Mark**.	Enter coordinates for the **Registration Mark**.
Bottom Left Select if a bottom left **Registration Mark** should be used. Enter coordinates for the **Registration Mark**.	**Bottom Right** Select if a bottom right **Registration Mark** should be used. Enter coordinates for the **Registration Mark**.
Regmark Size Enter the size of the **Registration Mark**.	

5.7.9 Copy Layer and Curves

1. Select the **Layer** you want to copy.
2. The copy function is available as:

	Main Menu->**Layer**->**Copy Layer(s) With Curves**
	Selected Job->**Layers**->**Copy Layer(s) Including Curves**

5.7.10 Copy Layer, no Curves

1. Select the **Layer** you want to copy.
2. The copy function is available as:

	Main Menu->**Layer**->Copy **Layer(s)** Without **Curves**
	Selected Job->**Layers**->Copy **Layer(s)** Without **Curves**

5.7.11 Remove Layer

1. Select the **Layer** you want to delete.
2. The delete function is available as:

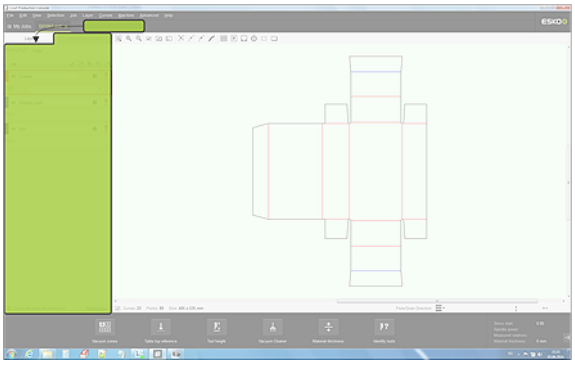
	Main Menu->**Layer**->Remove **Layer(s)**
	Selected Job->**Layers**->Remove Active **Layer(s)**

5.7.12 Remove Empty Layers

Main Menu->**Layer**->Remove Empty **Layers**...

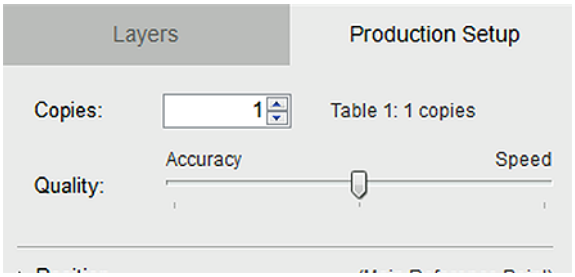
All **Layers** without curves will be removed.

5.8 Selected Job, Production Setup



5.8.1 Number of Copies

Selected Job->**Production Setup**->**Copies**



Copies

Specify **Number of Copies** to produce.

Table

Displays the **Job layout** on *Table 1* (X x Y)

X - **Number of Copies** along X.

Y - **Number of Copies** along Y.

5.8.2 Quality

Accuracy

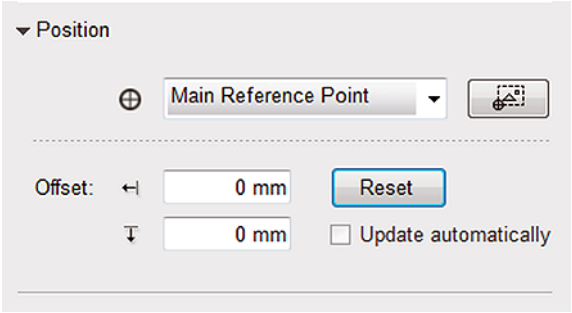
The performance is optimized to achieve maximum accuracy.

Speed

The performance is optimized to achieve maximum speed. Less accuracy is a possible consequence.

5.8.3 Job Position

Selected Job->Production Setup->Position



Reference Point

Select the ***Reference Point*** to use.

Move Job to Reference Point

The lower left corner of current Job will be placed in selected **Reference Point**.

Corner of surrounding rectangle.

Offset

If you want to place the job with an offset to selected **Reference Point**, add proper X/Y offset values.

Reset

Offset values are set to zero.

Update automatically

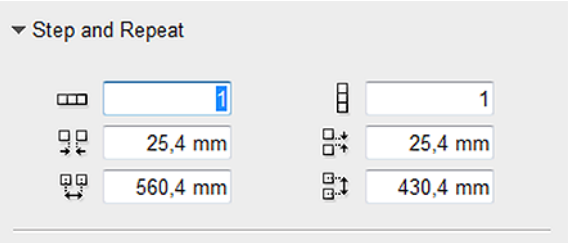
This is a function for **Jobs** containing **Registration Marks** and **Multiple Copies** are executed.

The **Job Position** is updated after each copy:

A modified start position for one copy will be used as **Job Position** for the next copy.

5.8.4 Step and Repeat

Selected Job->Production Setup->Step and Repeat



Number of Copies along X.	**Number of Copies** along Y.
Gap between copies along X.	Gap between copies along Y.
Step size between copies along X	Step size between copies along Y.

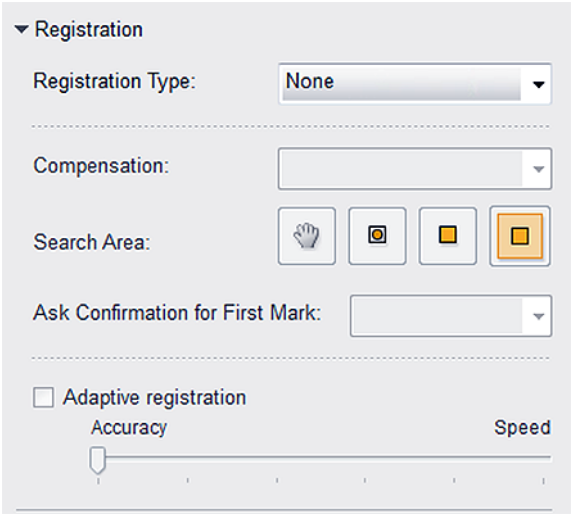
Notes:

- You enter either **Gap** or **Step size**.
- You need to enter a total ***Number of copies*** that is equal to or larger than the step and repeat - numbers

5.8.5 Registration

Registration Types

Selected Job->Production Setup->Registration



From the drop down list, select wanted **Registration Type**: *None*, ***Registration Marks***, ***Edge Recognition***.

Note: If the **Selected Job** includes a **Regmark Layer**, the **None** alternative is not available.

For more information, see ***Registration Types***.

No **Registration Marks**

No **Registration**, the **Job** is executed at the position of the selected **Reference Point** + **Offset**, if any.

Use Registration Marks

Read **Registration Marks**.

Compensation Types

Select from the following **Compensation Types**:

- Placement
- Register Curve
- Register Layer
- Linear Compensation
- Full Compensation

For more information, see ***Compensation Types***.

Search Area

HW

Different ways of **Registration Mark** search is available:

Manual

The center of every **Registration Mark** is defined manually using the arrow keys on your keyboard and a live camera image or **Laser Pointer**.

Center Only

iPC attempts to locate each **Registration Mark** automatically. If it is unable to locate a mark, you are prompted to manually position the camera using the arrow keys on your keyboard. iPC will only recognize the intended **Registration Mark** if it is near the center of the camera image.

Normal

This option is nearly identical to **Center Only**, except that the **Registration Mark** doesn't need to be near the center of the camera image for iPC to recognize it.

As long as the mark is completely within the camera image, iPC will automatically reposition the camera directly over the center of the mark before reading its position.

Extended

If the **Registration Mark** is not completely within the camera image, iPC expands the field of view by moving the camera to up to four additional overlapping positions around the original image.

Ask Confirmation for First Mark

HW

For the first **Register Mark** in each **Job**, you will be asked for confirmation.

Adaptive Registration

Select this option to optimize **Register Mark** read, focusing on:

Accuracy

Read all **Registration Marks** available in order to achieve maximum accuracy.

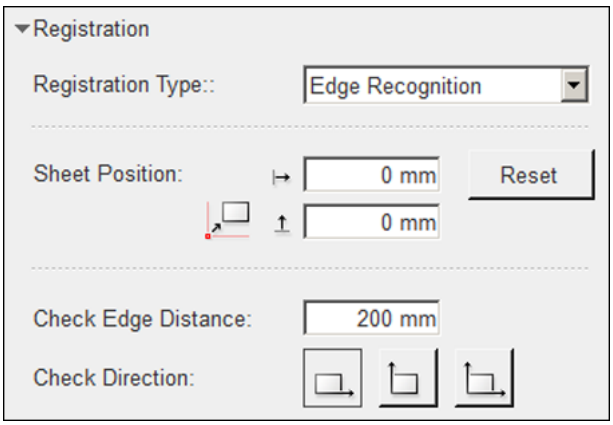
Speed

Minimize the number of **Registration Marks** used in order to achieve maximum speed. Less accuracy is a possible consequence.

Will take effect from the second **Table** of a job.

Use Edge Recognition

Use **Edge Recognition** to find correct job position.



Sheet Position

Specify the distance from **Selected Reference Point** where the camera should search for the sheet corner.

Check Edge Distance

Specify the measuring distance to be used.

Check Direction

Select which direction to measure:

Corner and X

Sheet Corner and a position **Check Edge Distance** from corner in X-direction is detected.

Corner and Y

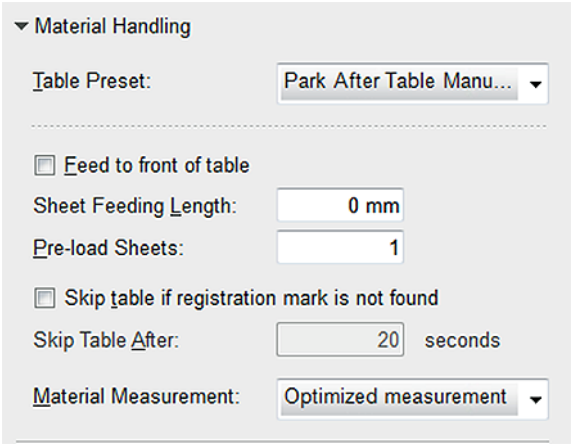
Sheet Corner and a position **Check Edge Distance** from corner in Y-direction is detected.

Corner, X and Y

Sheet Corner and a position **Check Edge Distance** from corner in both X and Y-direction is detected.

5.8.6 Material Handling

Selected Job->Production Setup->Material Handling



Function groups:

Table Preset

Material Feed

Skip Table

Material Measurement

Table Preset

Table Preset defines some basic behaviour of the system.

From the drop-down list, select one of the **Table Presets** available.

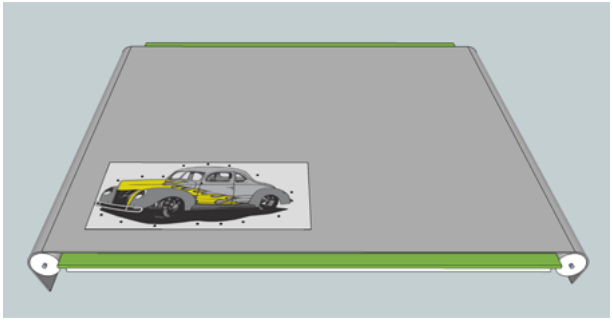
For more information about **Table Preset**, go *here*.

Material Feed Functions

Note: These features are available only when **Sheet Feed Table Preset** is selected.

Feed to front of table

HW



Automatically feed sheets to the front of the table.

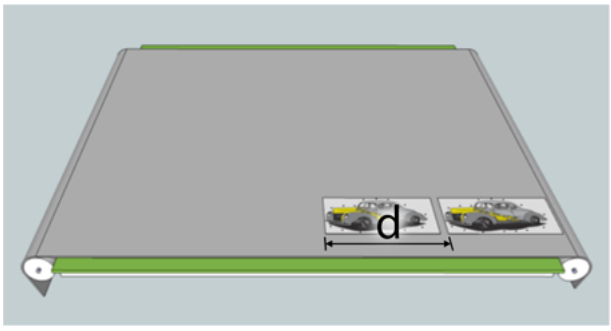
Sheet Feeding Length and **Pre-Load Sheets** options are disabled unless a **Sheet Feed Table Preset** is selected.

The feeding length is calculated using the **Table to Feeder** distance and the **Width** parameters in the **Options** dialog.

Notes: This function is for **Sheet Feeder** operations only.

Sheet Feeding Length

HW



Sets the distance your device will feed the sheet(s) when using **Sheet Feeder**.

Setting the value properly ensures minimum feed time. The **Feed Length** is usually approximately equivalent to the sheet length or slightly larger.

If multiple sheets are on the table at one time, the length may be set slightly smaller.

Multiple sheets on the table maximizes vacuum hold-down.

Note: This function is for **Sheet Feeder** operations only.

For more information, see **User Manual for the Cutting Table.**

Pre-load Sheets

HW

Specify the number of sheets to be loaded at the start of your production.

Use this function when you have **Multiple Sheets** on the table, and you need to load more than one sheet before production start.

Skip Table Functions

Note: These features are available only when **Sheet Feed** or **Roll Feed Table Preset** is selected.

HW

Skip Table if Registration Mark is not found

If the **Registration Mark** is not found, iPC will automatically skip the **Table** during **Sheet Feed** or **Roll Feed** productions.

The **Skip Table** feature allows iPC to run with less human intervention by automatically avoiding production breaks due to mis-loaded sheets or damaged registration marks.

Note: If **Registration Mark** is not found on two successive sheets, the execution will stop.

Skip Table After

Entering a number of seconds in the **Skip Table After** field delays the skipping of the table

Use this function to provide some time for manual correction.

Material Measurement

Decide how to carry out the material thickness measurement.

From the drop-down list, select:

Optimized Measurement

- If **No Registration** - material is measured in two opposite corners of the material.
- If **Registration** - material is measured in the position of the first **Registration Mark**.

Measure at Laser Position

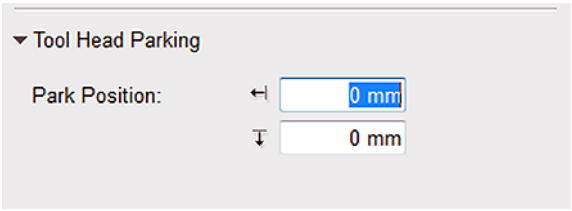
The material is measured in current **Laser position**.

Successive sheets are measured in the same postition.

Note: This function is available when **No Registration** is selected only.

5.8.7 Tool Head Parking

Selected Job->Production Setup->Tool Head Parking

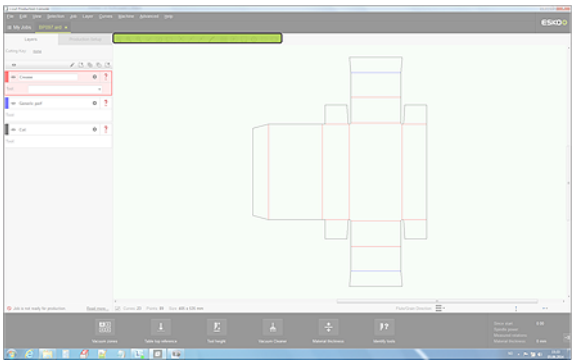


Specify **Park Position**.

If current **Production Setup** contains a **Park** command, the machine will move to the specified **Park Position**.

The specified **Park Position** (X &Y values) is relative to **Main Reference Point**.

5.9 Table View Toolbar



5.9.1 Zoom

	Main Menu->View->Zoom
	Table View Toolbar->Zoom

By the mouse, define a **Zoom** area.

5.9.2 Zoom In

	Main Menu->View->Zoom In
	Table View Toolbar->Zoom In
	Ctrl+Add

Click to **Zoom** in.

5.9.3 Zoom Out

	Main Menu->View->Zoom Out
	Table View Toolbar->Zoom Out
	Ctrl+Minus

Click to **Zoom** out.

5.9.4 Fit to Job

	Main Menu->View->Fit to Job
	Table View Toolbar->Fit to Job
	Ctrl+Shift+J

Selected **Job** will fill **Table View** window.

5.9.5 Fit to Board

	Table View Toolbar->Fit to Board
	Ctrl+Shift+J

Selected **Job** will fill the board displayed in **Table View** window.

5.9.6 Fit to Table

	Main Menu->View->Fit to Table
	Table View Toolbar->Fit to Table

	Ctrl+Shift+T

The **Cutting Table** including the selected **Job** will fill the **Table View** window.

5.9.7 Edit Points

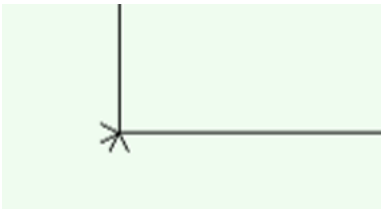
	Main Menu->**View**->**Curve Points**
	Table View Toolbar->**Curve Points**

Enter **Edit Point Mode**.

On selected curve, the **Curve Points** are highlighted, available for edit.

5.9.8 Curve Directions

	Main Menu->**View**->**Curve Directions**
	Table View Toolbar->**Curve Directions**



Show **Curve Direction**.

An arrow at the start of each curve indicates **Curve Direction**.

5.9.9 Show Curve Points

	Main Menu->**View**->**Curve Points**
	Table View Toolbar->**Show Curve Points**

All **Curve Points** are highlighted.

5.9.10 Tool Path

	Main Menu->View->Tool Path
	Table View Toolbar->Tool Path

Use this function to visualize the **Tool Path** of a **Milling Tool**.

5.9.11 Vacuum Zones

	Main Menu->View->Vacuum Zones
	Table View Toolbar->Vacuum Zones

Current **Vacuum Zone** configuration is shown in **Table View**.

5.9.12 Parking Position

	Main Menu->View->Parking Position
	Table View Toolbar->Parking Position

Current **Parking Position** is shown in **Table View**.

5.9.13 Table Rulers

	Main Menu->View->Table Rulers
	Table View Toolbar->Table Rulers

Cutting Table Rulers are shown in the **Table View** window.

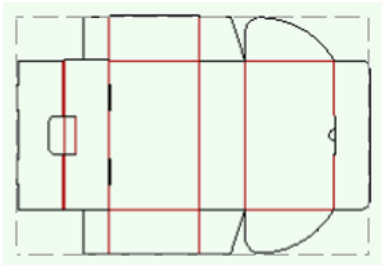
5.9.14 Reference Point

	Main Menu->View->Reference Point
	Table View Toolbar->Reference Point

The selected **Reference Point** is shown.

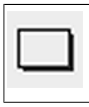
5.9.15 Job Size

	Main Menu->View->Job Size
	Table View Toolbar->Job Size



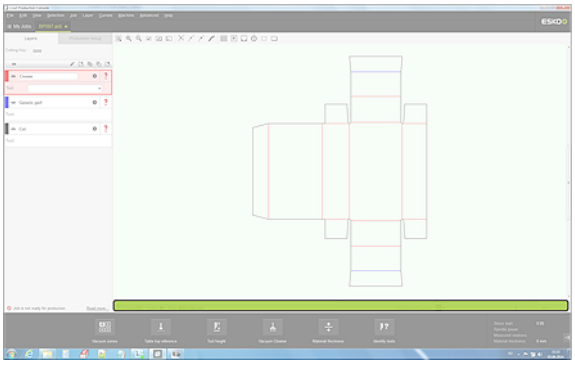
The **Bounding Box** for the **Selected Job** is displayed.

5.9.16 Sheet Location

	**Table View Toolbar->Show Sheet Location**

This function is used in conjunction with **Step and Repeat** to show the board correctly positioned.

5.10 Selected Job Properties Bar



The following information is available:

Curves:

Number of curves in **Selected Job**

Points:

Number of curve points in **Selected Job**

Size:

The size of **Selected Job** (X x Y).

This is the size of one copy of the **Job**; not influenced by **Step and Repeat** values.

Total Size:

The size of **Selected Job** (X x Y).

This is the size of of the complete **Job**; including **Step and Repeat**.

X:

Current **Mouse Pointer** position (X) relative to the selected **Reference Point**.

Y:

Current **Mouse Pointer** position (Y) relative to the selected **Reference Point**.

5.10.1 Flute Direction

	This symbol indicates the **Flute Direction** for the displayed job.
	This symbol indicates the **Flute Direction** for the displayed job.

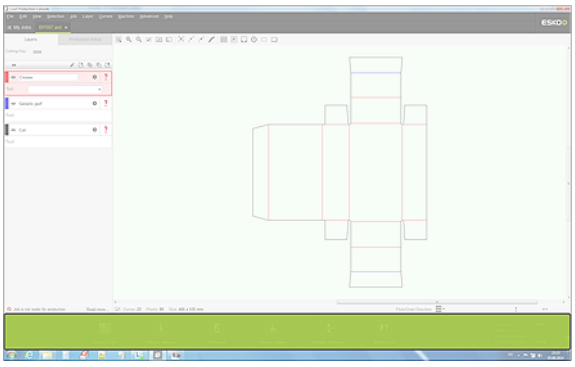
	No flute / grain direction specified

Normally, the **Flute Direction** is specified in the **Input File**.

Manually, the **Flute Direction** is altered from:

- **Selected Job Properties Bar**->**Flute Direction** drop-down menu.

5.11 Machine Panel



Machine Panel provides information about the **Job** currently executed on the **Cutting Table**.

The overall status of **Job Execution** is displayed as:

Edit Job / Idle mode - job preparation

In this mode, you can:

- Edit new jobs
- Start a new job

Execution Mode - execution is on-going

Error mode - error, execution has stopped.

iPC **Message Box** will provide more information.

5.11.1 Machine Panel Views

It is possible to configure how the **Machine Panel** is displayed on the screen:

Machine Panel->Select View

You can select the following views:

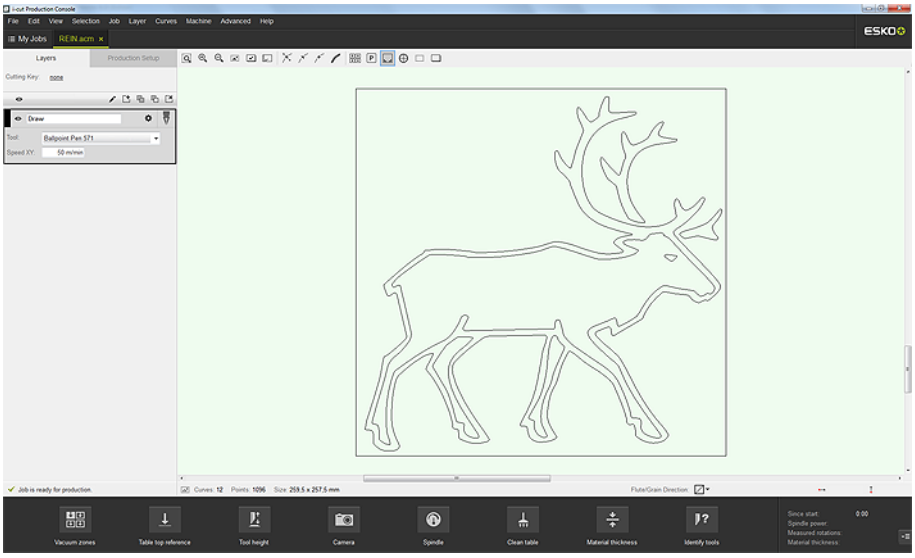
- at the bottom
- to the right
- fill the whole screen

1 2

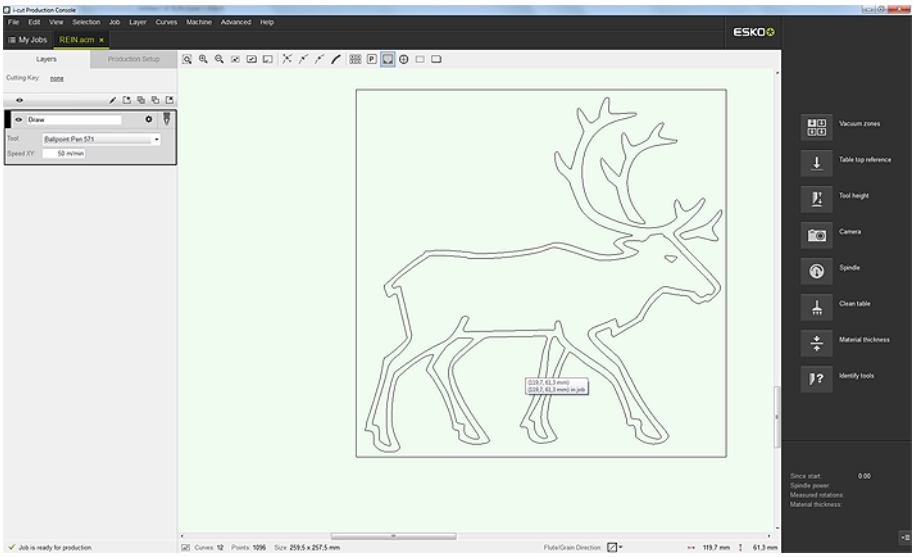
The different views are shown below.

The numbers refers to ***Machine Panel Functions*** description.

Bottom View



Right View



Full Screen View

5.11.2 Machine Panel Functions

The **Machine panel** functions available will change depending upon the status of the system.

The following states are defined:

Idle Mode

- *Material Replacement*
- *Stop*
- *Job finished*

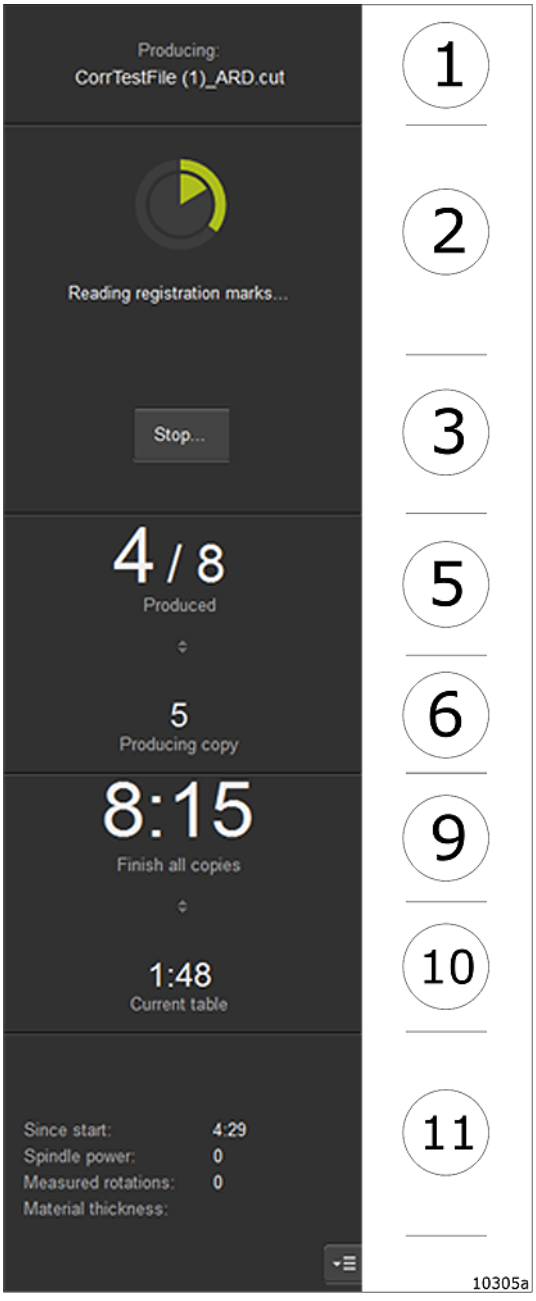
Execution Mode

- *Executing*

Error Mode

- *Error*
- *Error/Pause*
- *Safety stop*
- *Regmark not found*

Executing



1 Name of file executed.

2 Status of Current Job

- Inner circle - **Current Table**
- Outer circle - **Current Job**

3 Stop Production dialog

Stops production after **Current Table**.

Modify Job is then available.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

6 - Producing copy

Copy number currently produsced

9 - Finish all copies

Estimated time until all requested copies are completed.

10 - Current table

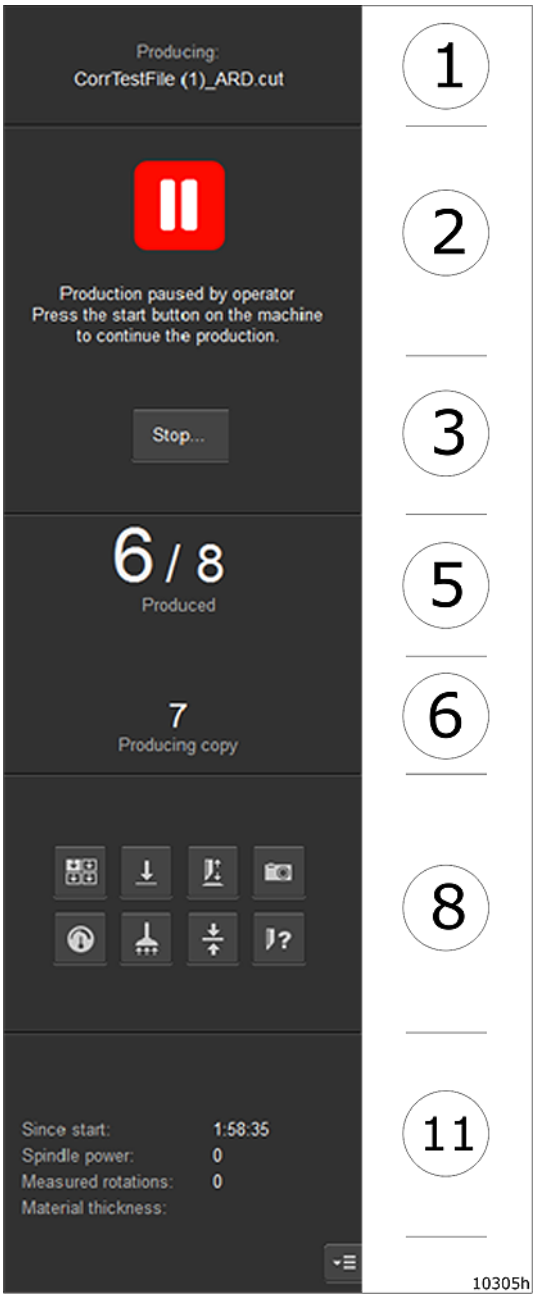
Estimated time until **Current Table** is completed.

Note: Not for first **Table**, visible for successive **Tables** only.

11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Pause



1 Name of file executed.

2 Status of Current Job

- Production paused by operator
- Press *Start* to continue.

3 Stop Production dialog

Stops production after **Current Table**.

Modify Job is then available.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

6 - Producing copy

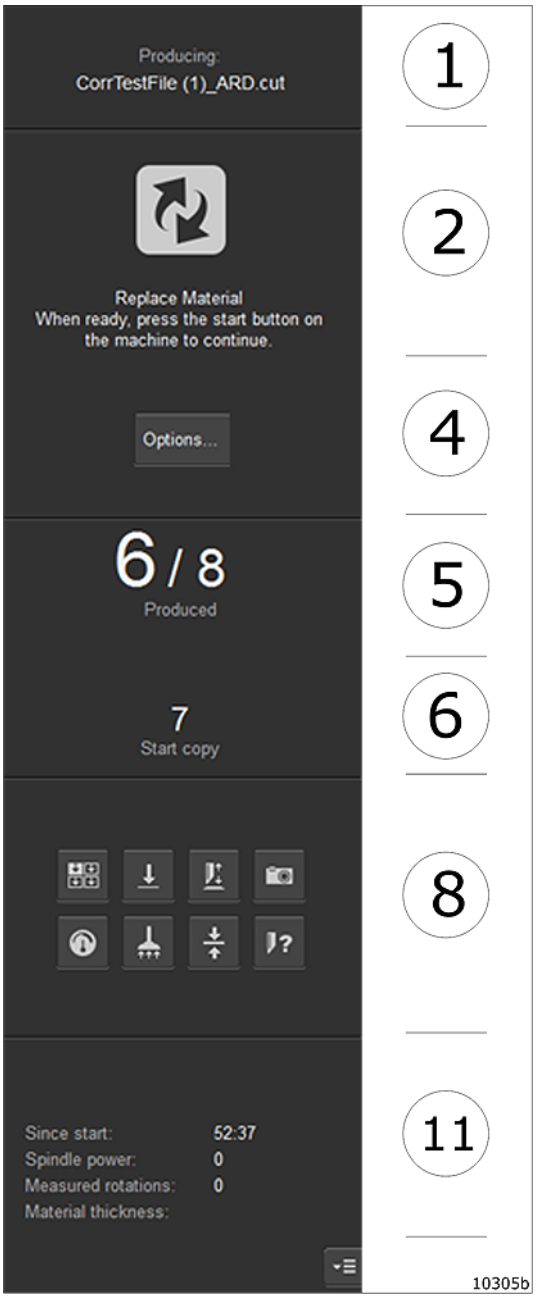
Copy number currently produsced

8 - *Machine Panel toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Material Replacement



1 Name of file executed.

2 Status of Current Job

- Replace material.
- Press *Start* to continue.

4 Start Production dialog

- Produce remaining copies.
- Restart from current Table
- Restart all.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

6 - Producing copy

Copy number currently produsced

8 - *Machine Panel toolbar*

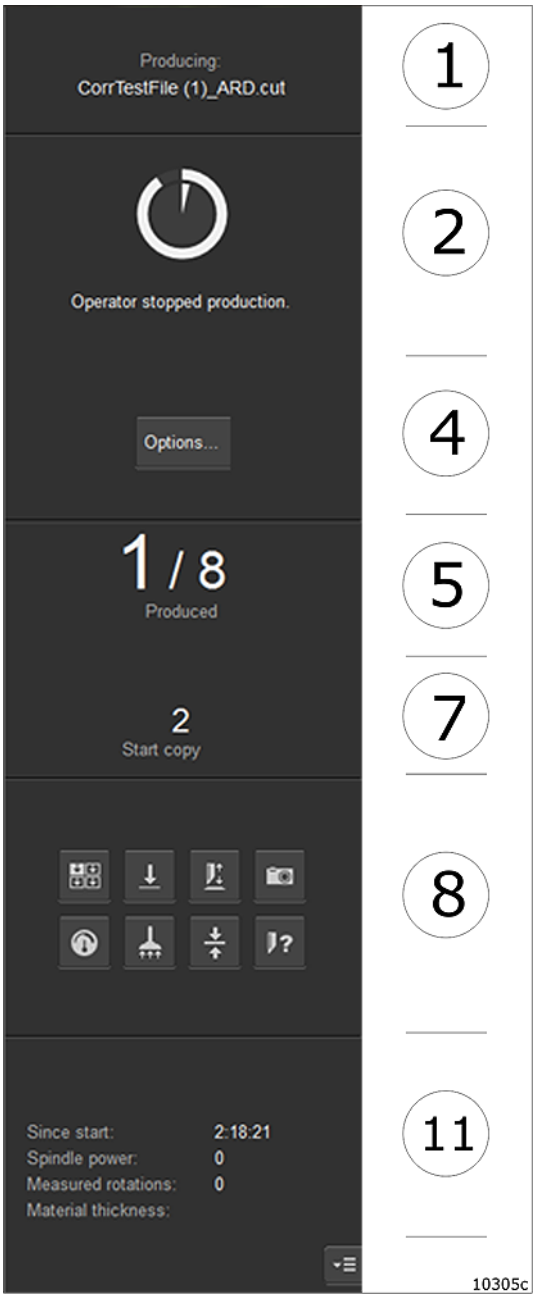
11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Note: This state is entered when:

- If **Park after Table** is enabled and the **Table** is completed.
- **Execution stop after this Table** is enabled.

Stop



1 Name of file executed.

2 Status of Current Job

- Production stopped by operator.
- Machine moved to **Park Position**.

4 Start Production dialog

- Produce remaining copies.
- Restart from current Table
- Restart all.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

7 - Start on copy

Copy number that will be produced if you continue execution.

8 - *Machine Panel toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Note: This state is entered when:

- If *Stop* is pressed twice
- Execution is stopped from **Machine Panel**.

Error

1 Name of file executed.

2 Status of Current Job

Information about the error condition.

3 Stop Production dialog

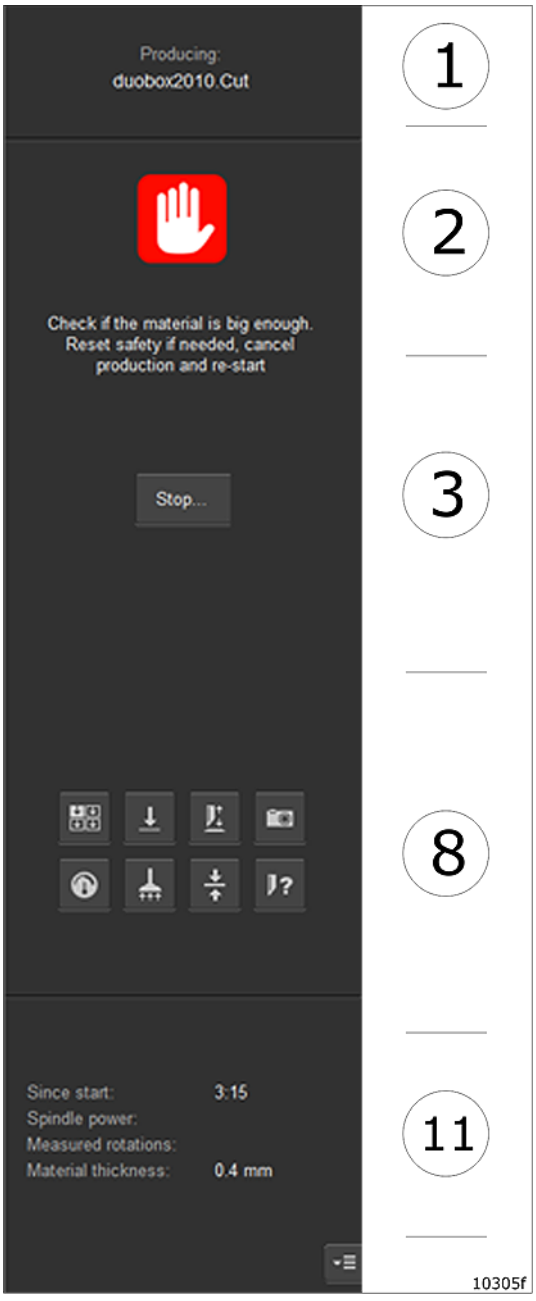
Stops production.

8 - *Machine Panel toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Safety stop



1 Name of file executed.

2 Status of Current Job

Machine stop due to safety error.

Information about the error condition.

3 Stop Production dialog

Stops production.

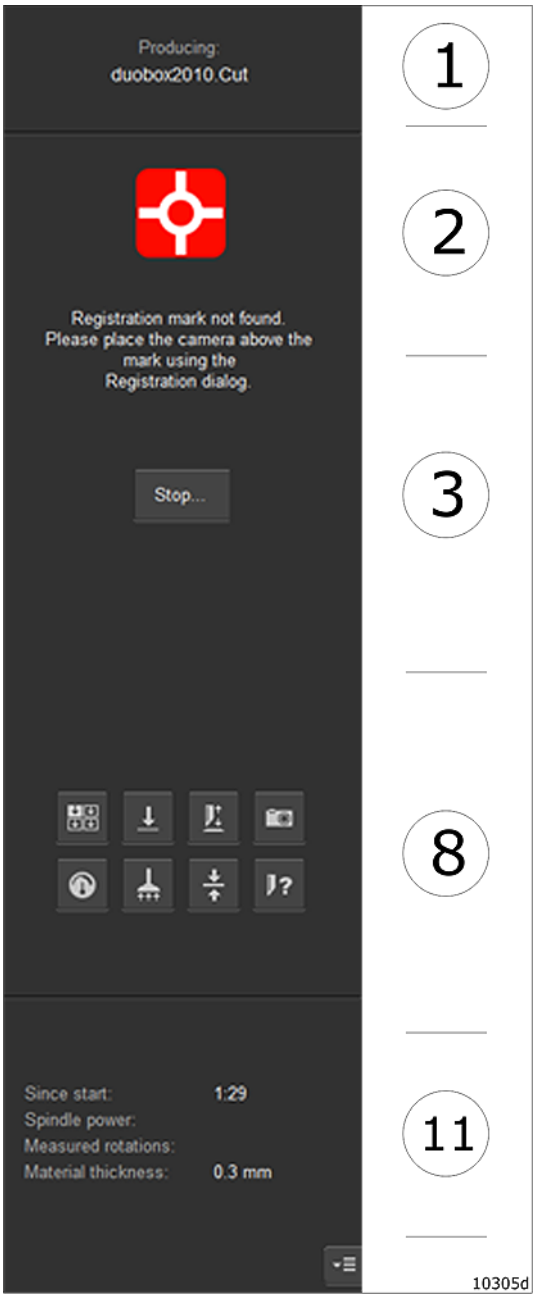
8 - *Machine Panel toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Regmark not found

HW



1 Name of file executed.

2 Status of Current Job

Machine stop due to **Registration Mark** not found.

Information about the error condition.

3 Stop Production dialog

Stops production.

8 - *Machine Panel toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Job finished

1 Name of file executed.

2 Status of Current Job

Job is completed.

8 - *Machine Panel toolbar*

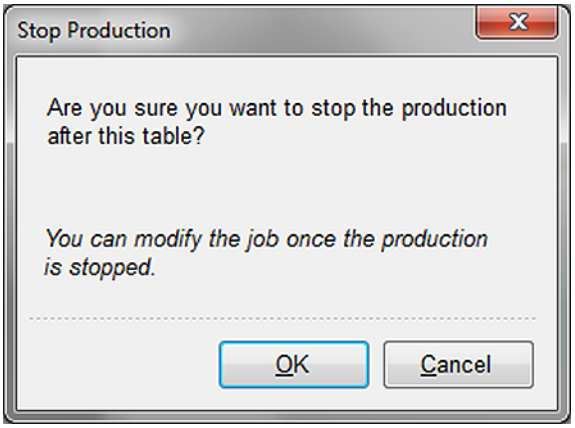
11 - Performance information

- Time elapsed since start of **Current Job**
- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

iPC stop functions

II	To stop job execution, press ***Stop*** on **Operators Panel**.

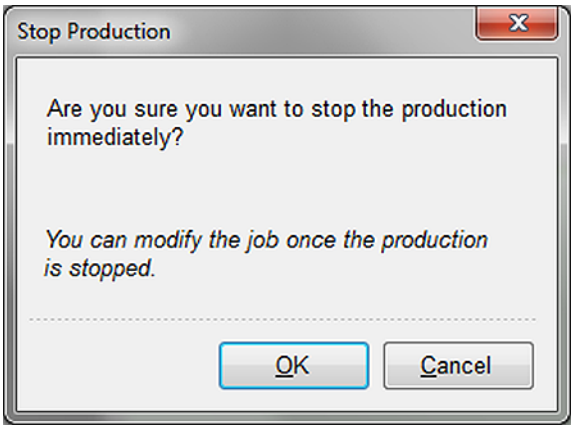
Stop in Execution Mode


Stop Production
Are you sure you want to stop the production after this table?
You can modify the job once the production is stopped.
OK
Cancel

Stop production after this **Table**:

- System enters **Idle mode**
- Modify job is available.

Stop when in Pause


Stop Production
Are you sure you want to stop the production immediately?
You can modify the job once the production is stopped.
OK
Cancel

When we press **Stop** while in **Pause**:

- System enters **Idle mode**
- Modify job is available.

5.11.3 Machine Panel Toolbar

Vacuum Zones

	Main Menu->Machine->Vacuum Sections
	Machine Panel Toolbar->Vacuum Sections

Select Vacuum Sections suitable for **Selected Job**.

Proper selection is important to achieve the best possible material hold down.

Table Top Reference

	Main Menu->Machine->Table Top Reference
	Machine Panel Toolbar->Table Top Reference

On the **Cutting Table**, execute the **Table Top Reference** wizard.

Updates table top level measurement in current **Laser Pointer** position.

Measure on top of **Cutting Underlay**; no material.

Adjust **Tool Height**

	Main Menu->Machine->Adjust Tool Height
	Machine Panel Toolbar->Tool Height

On the **Cutting Table**, execute the **Adjust Tool Height** wizard.

Camera View

	Main Menu->Machine->Show Camera
	Machine Panel Toolbar->Camera

HW

Enter the **Camera View** dialog for manual camera picture inspection and adjustment..

Spindle Warm Up

	Main Menu->Machine->Start Spindle Warm Up
	Machine Panel Toolbar->**Spindle**

HW

On the **Cutting Table**, a **Spindle Warm Up** sequence is executed.

Vacuum Cleaner

	Main Menu->**Machine**->**Start Vacuum Cleaner**
	Machine Panel Toolbar->**Vacuum Cleaner**

HW

Vacuum Cleaner on/off control.

For machines with **Milling Tool** installed.

May be used for manual dust removal after job execution.

Material Thickness Measurement

	Machine Panel Toolbar->**Material Thickness**

On the **Cutting Table**, a **Measure Material Thickness** sequence is executed.

Material thickness measurement is done as part of the job execution.

This function is typically used when you need to know the thickness of the material before you start the job.

Measured thickness is displayed in the **Performance information** part of the **Machine Panel**.

Identify Tools

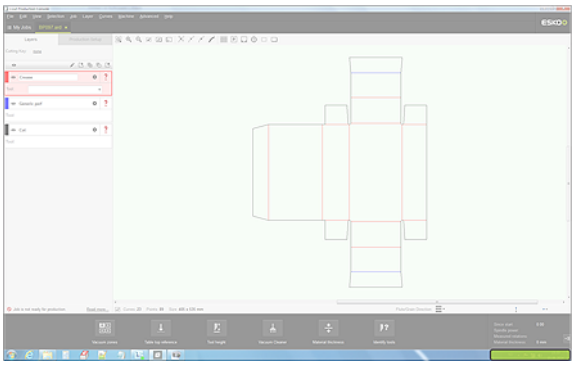
	Main Menu->**Machine**->**Identify Tools**

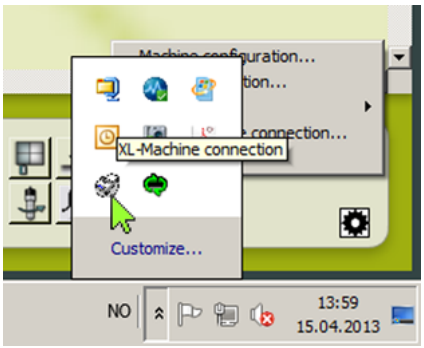
	Machine Panel Toolbar->Identify Tools

On the **Cutting Table**, a **Tool Identification** sequence is executed.

Use this after the insertion of a new tool.

5.12 Machine Connection





From **Windows Toolbar**, invoke **Machine Connection**.

For more information, go to *Machine Connection and Configuration*.

6. Before We Start

6.1 Introduction

In this chapter, we will describe some important concepts and parameters used in iPC that are essential in order to achieve optimal performance on your machine:

- *Table*
- *Table Preset*
- *Registration*
- *File Preparation*
- *Import Presets*
- *Cutting Keys*
- *Configure Tools*

6.2 About Table

It is important to understand the term **Table** used in this manual:

Cutting Table

Do not get confused by the term **Cutting Table**, which is the machine we use when processing our materials, as cutting, creasing, milling.

Table

The term **Table** describes the part of a job that fits into the **Work Area** of the **Cutting Table**.

Example 1

Ten copies of a printed or non-printed sheet is requested, only one sheet can be placed on the **Cutting Table** at a time.

Such a request will be executed as ten **Tables**.

Manual or automatic feeding will be initiated between each **Table**, depending on **Table Preset** selected.

A job is divided into two parts as it is longer than the table.

During execution, you complete the first **Table**. Then the material is fed forward to move the second part of the job into the work area. Then, the second **Table** is executed.

Example 2

A roll with printed decals should be cut.

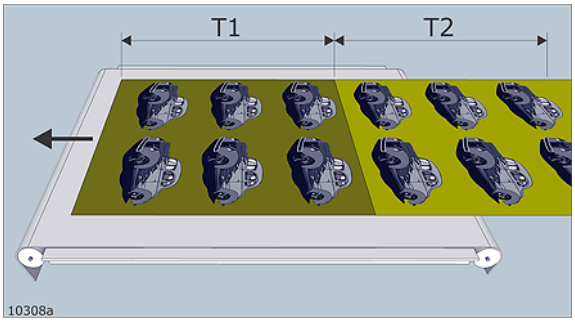
The roll includes two columns of decals.

Three rows of decals fits within the **Work Area** of the **Cutting Table**.

In order to cut the roll, a **Step and Repeat** of 3 x 2 should be requested.

Each **Table** consist of 6 copies

When total **Number of Copies** is set to e.g. 100, a conveyor feed will be executed between each **Table**, given that a **Rollfeed Table Preset** is selected.



6.3 Table Presets

Table Preset defines some basic behaviour of the system.

A set of standard **Table Presets** are installed by default.

In addition, you can add and delete presets to suit your need.

Select Table Preset

Selected Job->**Production Setup**->**Material Handling**->*Table Preset*

Maintain Table Preset

Main Menu->**Edit**->**Options...**->**Production**->*Table Presets*

Standard Table Presets

The following **Table Presets** are installed by default:

Park After Table

Before starting, the Operator must place first sheet on the table top.

When Start is pressed, this will happen:

- copy 1 will be produced, or
- the number of copies specified by **Step and Repeat** is produced.

Tool head will move to **Park Position** and display a message in Machine Panel.

Operator should replace material in same position, then press Start.

Remaining copies will be produced in the same way until specified **Copies** are produced.

Vacuum and blowback is integrated, meaning switched on / off automatically.

Park After Table Manual Vacuum

Operator must place first sheet on the table top before starting.

When Start is pressed copy 1, alternatively the number of copies given by **Step and Repeat** is produced.

Tool head will move to **Park Position** and display a message in Machine Panel.

Operator should replace material in same position, then press Start.

Remaining copies will be produced in the same way until specified **Copies** are produced.

Vacuum and blowback is manual, to be controlled by the operator from **Operators Panel**.

Roll Feed

HW

Requires conveyor. First copy on the roll must be placed on the table top before starting.

When Start is pressed, copy 1, alternatively the number of copies given by **Step and Repeat** is produced.

Traverse will move to the back of the table to transport the conveyor and the roll forward.

Second copy is produced. (First regmarks will have to be identified manually unless Step distance is specified correctly.) (Sjekk med Stian om dette er riktig)

Traverse will feed next copy (Regmarks will now be identified automatically.) Sequence continues until specified **Copies** are produced.

Vacuum and blowback is integrated, meaning switched on / off automatically.

Sheet Feed

HW

Requires **Sheet Feeder** and conveyor.

Start without any sheet on the table top.

When **Start** is pressed, the number of sheets defined by **Pre-load Sheets** (default 1) is loaded on to the table top by help of the **Sheet Feeder** and the conveyor + traverse.

Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

First sheet, alternatively the number of copies given by **Step and Repeat** in Y direction, is produced while **Sheet Feeder** is picking up the next sheet. First regmarks will have to be identified manually.

Traverse will move to the back of the table to transport the conveyor and the sheet forward.

Second copy is produced. Normally the regmarks are now found automatically. **Sheet Feeder** will simultaneously pick next sheet, but is during first copies learning when operation should start to present the sheet in due time.

Traverse will feed next sheet. Sequence continues until specified **Copies** are produced.

Vacuum and blowback is integrated, meaning switched on / off automatically.

6.4 About **Registration**

6.4.1 Adding Registration Marks

In order to achieve perfect print to cut alignment, all printed jobs destined for finishing with your iPC device should contain **Registration Marks**.

By adding **Registration Marks** to both the print and cut files, you are providing iPC with the necessary information to register the **Cut Path** to the **Printed Graphic**.

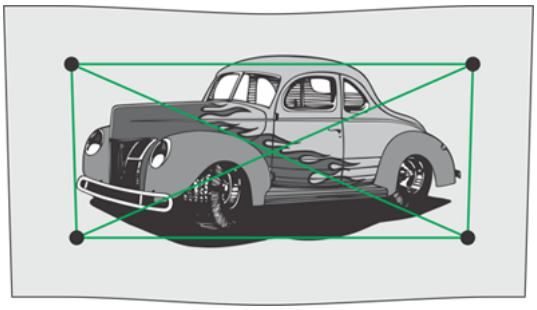
The placement and total number of **Registration Marks** depends upon the required cutting tolerance and the predicted amount of distortion.

i-cut Layout is a software package from Esko that has functions to automate the process of adding **Registration Marks**.

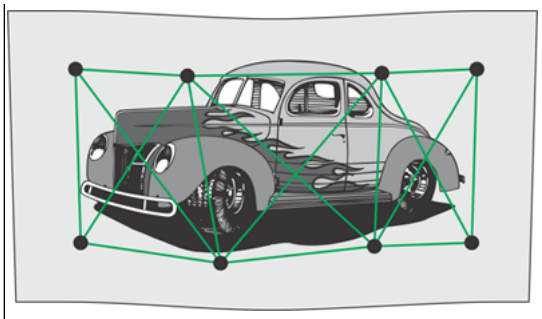
The same algorithm is used in ai-cut; is a special plug-in for Illustrator® and CorelDraw®, available from Esko.

Using those tools greatly simplifies the process of adding **Registration Marks**, but you should still understand the basic concepts explained in this section.

For more information about ai-cut, go *here*.



Poor triangulation of distorted graphics with only four **Registration Marks**.



Improved triangulation of distorted graphics with eight **Registration Marks**.

Understanding the **Registration** capabilities of iPC will help you decide how many marks to add to your job, and where to place those marks. Review the **Registration Types** section of this manual for more information on **Registration**.

For the best possible compensation, **Registration Marks** should be placed around, and inside (if possible) the cut path in a triangular relationship to one another. Jobs with tighter cutting tolerances require more **Registration Marks**.

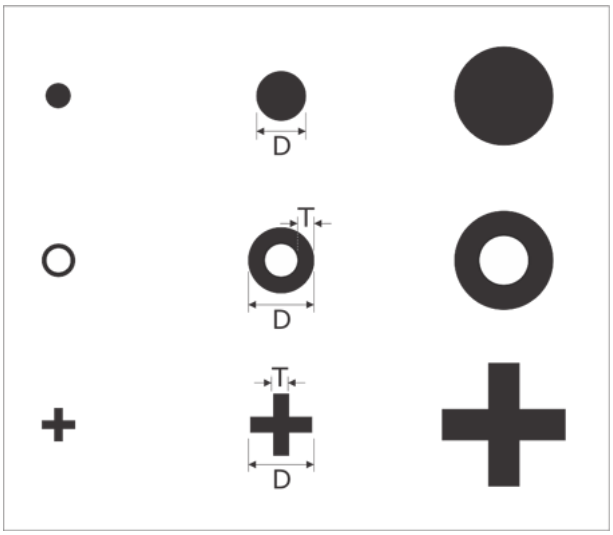
The more marks, the smaller each triangulated area becomes, and the more accurately iPC will be able to compensate for distortion in that area.

If there are specific areas within the job that are more critical than others, more **Registration Marks** should be added to those areas. It's difficult to accurately predict the amount of distortion that will occur in any printed job; therefore we suggest you always include more **Registration Marks** than you think you will need.

You can always remove unnecessary **Registration Marks** later in iPC, but once the job is printed it is impossible to add more **Registration Marks**.

Jobs longer than your cutting table will be divided and produced by iPC in sections. Adding **Registration Marks** along these divisions will improve registration and alignment of cut paths between sections.

6.4.2 Types of Registration Marks



Circle:	3 mm < D < 12 mm	1/8 in. < D < 1/2 in.
Donut:	4 mm < D < 12 mm	5/32 in. < D < 1/2 in.
	1 mm < T < D/4	3/64 in. < T < D/4
Cross:	4 mm < D < 15 mm	5/32 in. < D < 19/32 in.
	1 mm < T < D/4	3/64 in. < T < D/4

iPC supports three types of **Registration Marks**; circle, donut and cross.

The machine will search for **Registration Marks** and detect any of these automatically.

Thus, there is no function to specify type of **Registration Marks**.

A circle is the best choice for nearly all scenarios. If there is a high amount of reflection or insufficient contrast between the color of the printed **Registration Marks** and the background, a donut shape may provide iPC with a better regmark reading result.

6.4.3 Compensation Types

The **Compensation Type** dictate how iPC will register and modify **Cut Paths** based on the information it collects from reading **Registration Marks**.

The following **Compensation Types** are available:

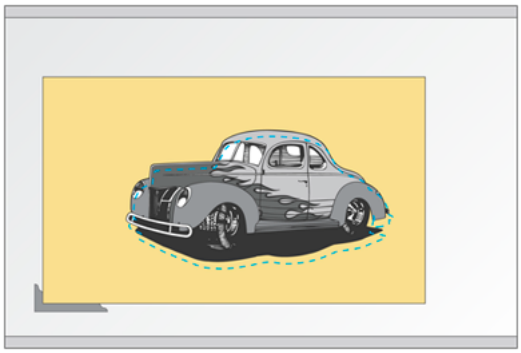
- **Placement**
- **Register Curve**
- **Register Layer**
- **Linear Compensation**
- **Full Compensation**

In order to complete the picture, we have included here also the description of two registration methods not using **Registration Marks**:

- No **Registration Marks**, use **Ruler**
- **Edge Recognition**

No Registration Marks, use Ruler

Sheet positioning against the **Ruler** ensures correct cut-out.



It is a pre-requisite that the graphics is correctly positioned relative to sheet corner.

Notes:

- It is a pre-requisite that the **Cutting table** is equipped with Rulers.
- The distance from **Reference Point** to geometry must be known.
- This method is not recommended if the job contains graphics that the cut-out must align to.

Edge Recognition

Sheet Position is unknown, cut-out is wrong

Sheet Position is obtained by **Edge Recognition**

Cut-out is perfect

It is a pre-requisite that the graphics is correctly positioned relative to sheet corner.

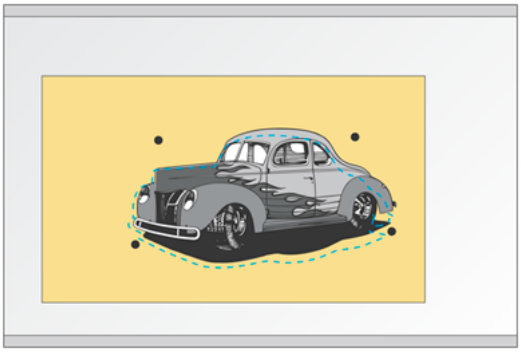
Notes:

- The distance from sheet edge to geometry must be known (the bounding box of the job).
- A straight sheet corner is presumed.
- This method is not recommended, as there is no compensation involved.

Placement

This simplest form of **Registration** rotates and positions all curves in all layers as one.

Size, shape and relative positioning of the curves all remain intact.

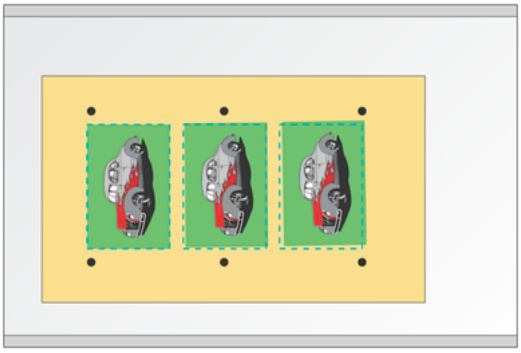


The position and rotation of the graphics is unknown

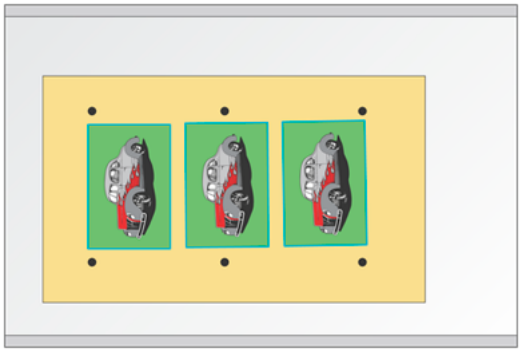
Using **Registration Marks** to obtain correct positioning.

Register Curve

Each curve is produced at the exact size and shape defined by the file, but registered individually from all other curves in the file; compensating for positional and rotational changes in the printed job.



The position and the rotation of the graphics is not known.



Using **Registration Marks** to modify the position and rotation of each curve individually.

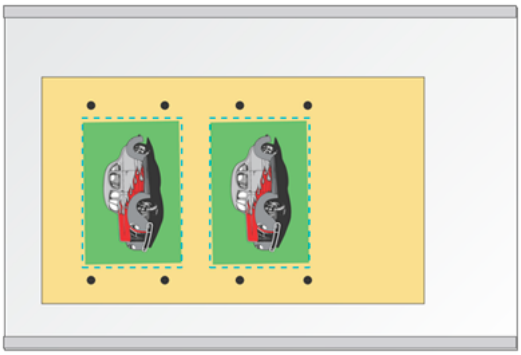
Register Layer

Similar to **Register Curve**, this registration type compensates each **Layer** individually. All curves in each **Layer** will maintain exact size, shape and relative positioning.

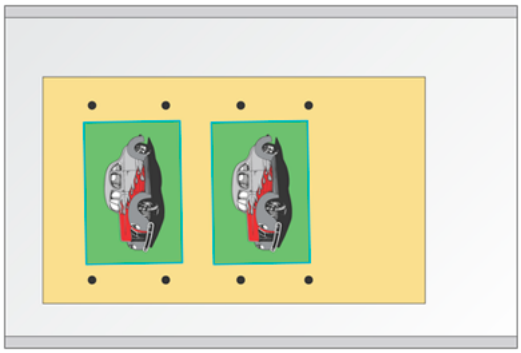
Linear Compensation

This **Registration Type** offers the second highest level of compensation.

When **Linear Compensation** is selected, iPC applies an average compensation for each curve. The size, shape, offset and rotation of all curves are altered to compensate for linear distortion in the printed graphic. **Linear Compensation** is rarely used because **Full Compensation** provides superior registration and compensation, but is still included as an option.



The position, rotation and size of the graphics is unknown.

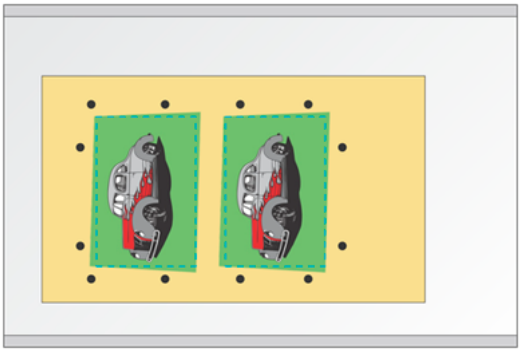


Using **Registration Marks** to modify position, rotation and scale of the cut-out.

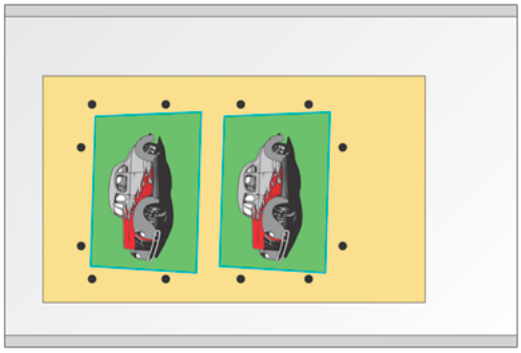
Full Compensation

When selected, iPC adjusts the position of each point on every curve individually according the positions of the three **Registration Marks** closest to those points.

This feature compensates for all types of distortion, including: offset, scale, rotation, skew and compound distortion. **Full Compensation** offers the highest level of compensation available and provides the closest possible match of cut path to printed graphic.



Position and shape of graphics is unknown



Using **Registration Marks** to re-calculate the shape of the graphics.

6.4.4 About Compensation Types

One **Registration Type** is selected for each **Job** (**Selected Job**->**Production Setup**->**Registration**).

Jobs printed with large amounts of bleed or jobs that must maintain an exact overall size, or contain cuts that must maintain an exact relative size may require using **Placement**, **Register Curve**, **Register Layer**.

Just a few marks around the outer edge of each path or group of paths provide sufficient information for these **Registration Types**.

Jobs that require precise **Cut to Print Registration**, or precise outer border width should be produced with **Full Compensation**.

Unstable materials such as flexible or applied graphics also most often require **Full Compensation** for proper **Registration**.

Jobs produced with traditional printing methods, like screen printing, contains the greatest amount of distortion.

Digitally printed jobs generally contain less distortion, but accuracy varies greatly from printer to printer. Producing digitally printed jobs with tight tolerances still requires compensation, especially if the job is printed on a flexible substrate.

6.5 File Preparation for iPC

6.5.1 File Types

iPC Input Files

The following file types are available for iPC import:

- **iPC files:** .cut, .script, .nest.
- **Curve files:** .acm, .ard, .mfg, .dxf, .ai, .pdf, .cf2, .ds2.

.script
Output from the ***i-script*** work flow.
Contains cut data separated from a graphics file.
For more information, go *here*.

.nest
This file type contains a saved **Nested Layout**.

Adobe Illustrator® is widely used for file preparation, but any vector-based design or drafting software capable of outputting one or more of the compatible file types may be used.

iPC Output Files

.cut
A **Job** saved as a .cut file contains all settings made to the file.
Thus, no **Import Presets** are active when importing such files.
Note: Often, **i-script** files use the extension .cut instead of .script.

6.5.2 Defining Cut Paths

Every job imported into iPC requires cut paths, which are vector curves made of line segments, arcs, Bezier points, etc. These paths are normally created or defined in your **Design Software**.

The cut quality of your finished jobs is the direct result of the quality of the cut paths you create. iPC has some basic tools for optimizing cut path quality and improving processing speed, but poorly drawn paths will produce poor cutting results.

The best cut paths are smooth curves that wrap perfectly around the simplest and most intricate details.

Poor cut paths consist of curves that wander in and out of registration, or rough curves made from an excessive number of points. Vectorization of raster graphics often generates poor curves that must be refined manually before cutting. To ensure proper registration between printed graphic and cut, each cut path and registration mark must be perfectly aligned to the associated graphic and registration mark in the print file.

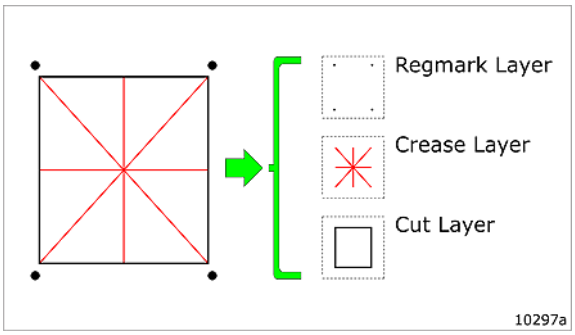
Jobs generated from Structural Design Systems like ArtiosCAD will be optimized for best cutting quality and no additional optimization is necessary.

Normally the cut and print data are created at the same time and separated into two files before the job is produced. This file separation can be done manually before printing or, if the job is going to be digitally printed, the *i-script workflow* enables compatible RIP softwares to automatically separate the files before outputting to the printing device.

6.6 Import Presets

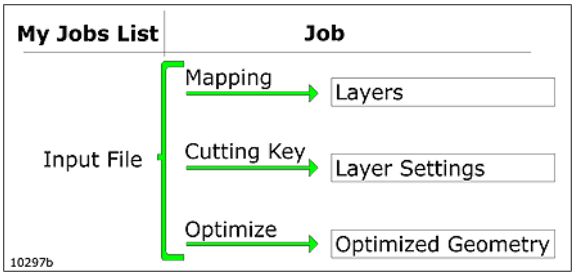
6.6.1 Using Import Presets

Basic function



We use **Import Presets** to automate the process of converting the geometry in the **Input File** into ready to cut curves in iPC **Layers**.

Import Preset Options

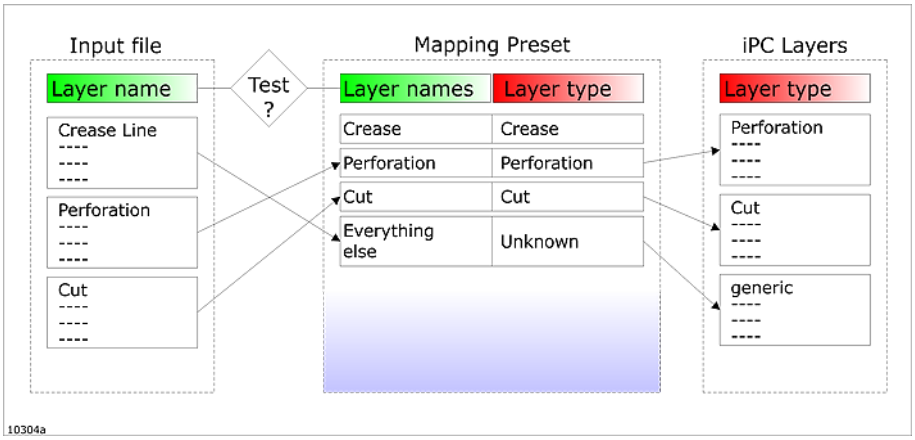


In addition to the basic mapping function, **Import Presets** can include also **Cutting Key**, **Optimization** and a **Description**.

Using this combination will automate the whole job of converting an **Input File** to a **Job** ready for execution.

6.6.2 Import Preset and Cutting Key

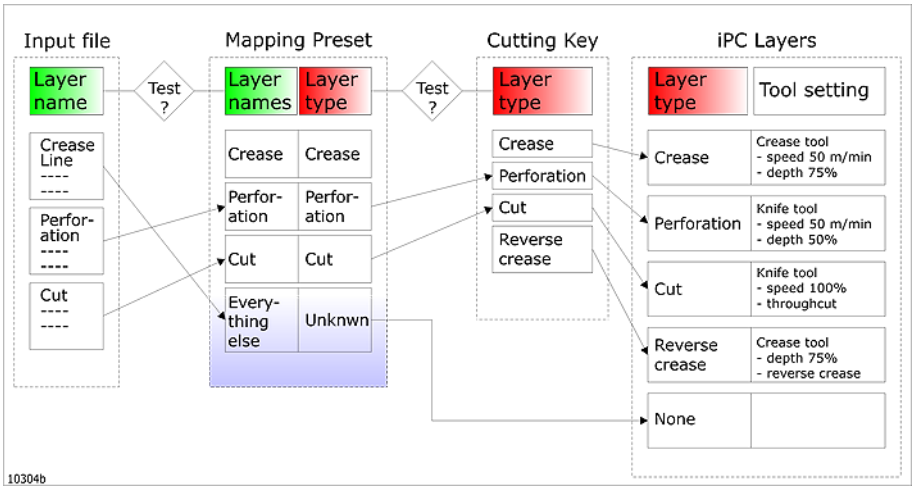
Import Preset Function



This figure shows the basic operation of **Import Preset**.

The **iPC Layers** created by this process must be modified with tool settings.

Using Cutting Key, sample 1



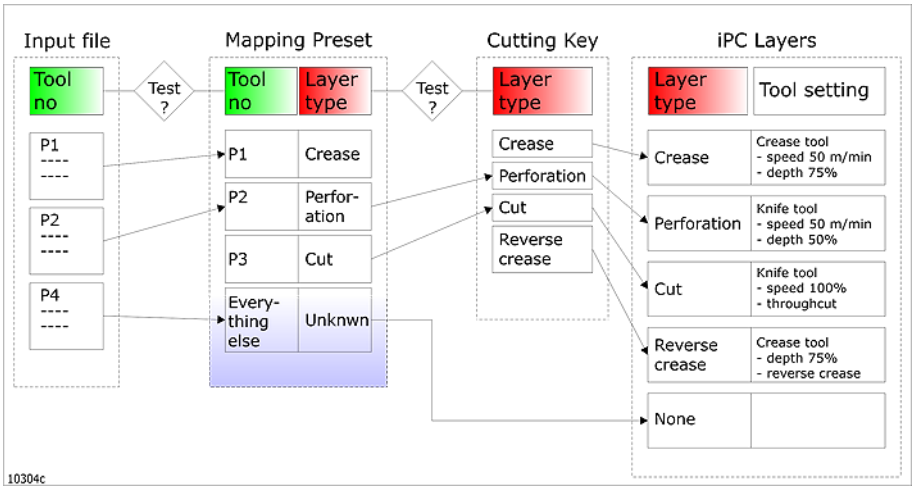
In this case, the **Input file** content is organized into **Layers**.

Layer names in the **Input file** are compared to **Layer names** in the **Import Preset**.

The corresponding **Layer Type** is used to select the proper **Cutting Key**.

If properly prepared, the **iPC Layers** created by this process are complete, with Tool selection and tool settings in place.

Using Cutting Key, sample 2



In this case, the **Input file** content is organized using **Tool numbers**, used for file format ACM.

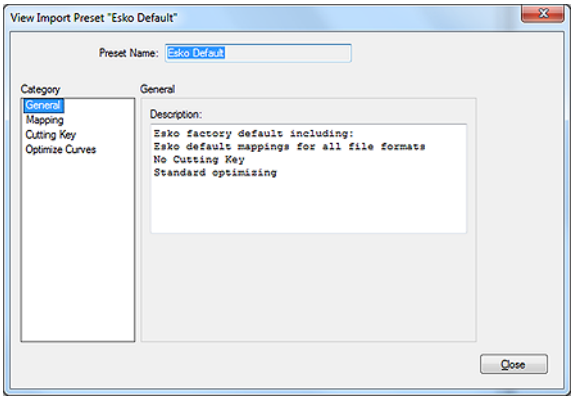
Tool numbers in the **Input file** are compared to **Tool numbers** in the mapping part of the **Import Preset**.

The corresponding **Layer Type** is used to select the proper **Cutting Key**.

If properly prepared, the **iPC Layers** created by this process are complete, with Tool selection and tool settings in place.

6.6.3 View Import Presets

	Main Menu->File->Add Job->View Preset
	Main Menu->Advanced->Manage Presets->Import Presets->View
	Preview Toolbar->View Preset



Use this function to explore the content of selected **Import Preset**.

For information about the different parameters, see *Create...*

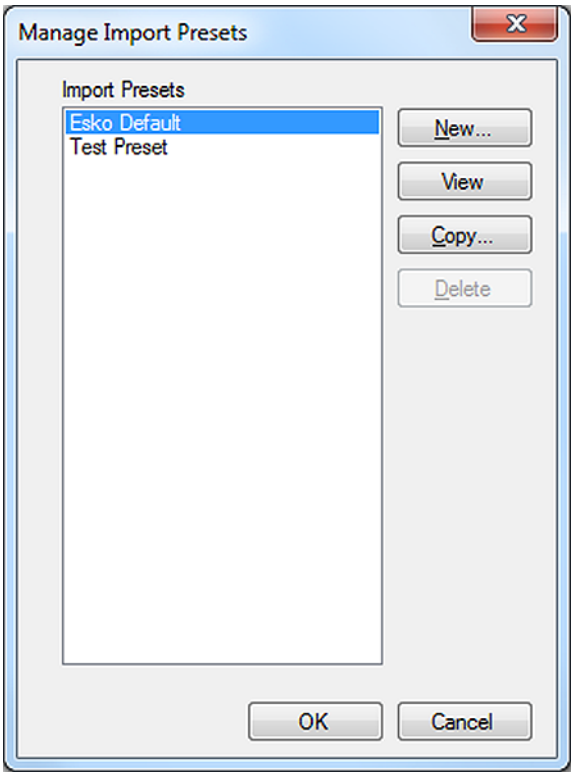
6.6.4 Select Import Preset

	Main Menu->File->Open->Import Preset
	Preview Toolbar->Job Preset

The selected **Import Preset** is used when reading the selected **Input File**.

6.6.5 Manage Import Presets

	Main Menu->Advanced->Manage Presets->Import Presets



New...

Create a new **Import Preset**.

For more information, go *here*.

View/Edit

View/Edit selected **Import Preset**.

View button is available for all **Esko Import Presets**.

Edit button is available for all **Self-defined Import Presets**.

Esko Import Presets are not available for editing.

Copy...

Create a new **Import Preset** based upon an existing one.

Delete

Delete selected **Import Preset**.

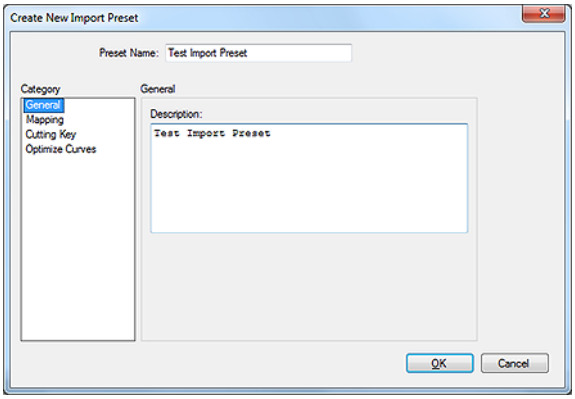
Note: You are not allowed to delete any **Esko Import Presets**.

Create new Import Preset

	Main Menu->Advanced->Manage Presets->Import Presets->New...

Go through each **Category** to enter relevant information:

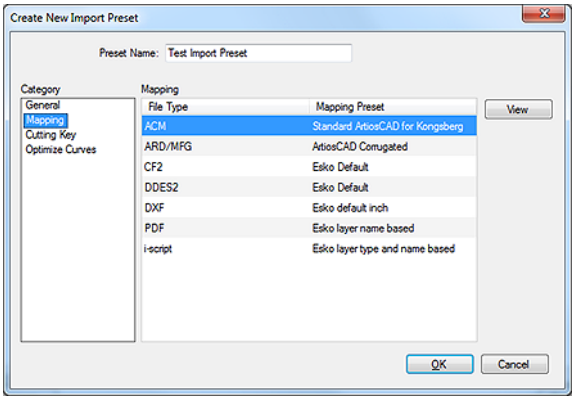
General



Preset Name
Enter the name of the new **Import Preset**.

Description
Enter a description.
The description is used to recognize the **Import Preset** for later use.

Mapping



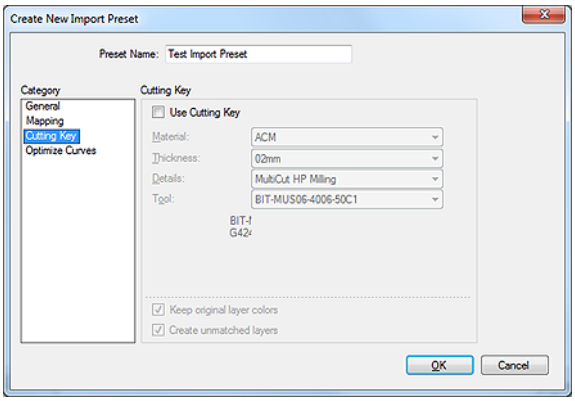
File Type
This is a list of supported **File Types**.
Select the **File Type** to use and select **Mapping Preset**:

Mapping Preset
Open the drop down list to see all alternatives available.
Initially, the factory default mapping is used for each file format.
If you have created your own **Import Preset Mapping**, it will be available from this menu.
For more information, go *here*.

View

View the selected **Import Preset Mapping**.

Cutting Key



Use Cutting Key

Enable and select a **Cutting Key** to combine **Import Preset Mappings** and **Cutting Keys**.

Using this combination correct will automate the entire process of reading an **Input File** and convert it to a proper **Layer** setting.

The link between **Import Mappings** and **Cutting Keys** is ***Layer Types***.

The **Import Mapping** will result in a number of **Layers** with certain **Layer Types**.

Selected **Cutting Key** also includes **Layers** with defined **Layer Types**.

These two sets of **Layers** will be matched based on **Layer Types**.

Keep Original Layer Colors

If relevant, the **Layer Colors** from the **Input File** are kept.

Create Unmatched Layers

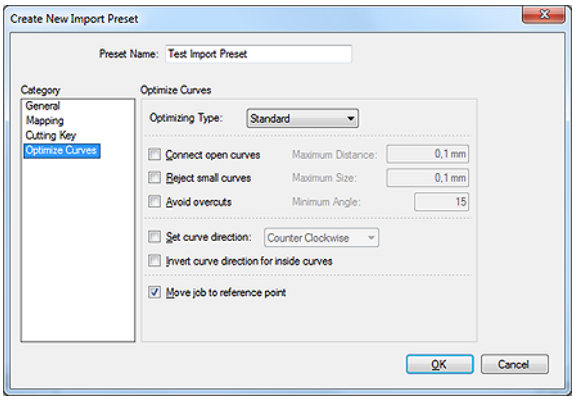
When this function is selected:

If the **Cutting Key** include **Layers** that is not populated from the input file / selected mapping, these **Layers** are created as empty layers. Can be useful if geometry has to be moved between **Layers** after import.

When this function is disabled:

Such data is ignored.

Optimize Curves



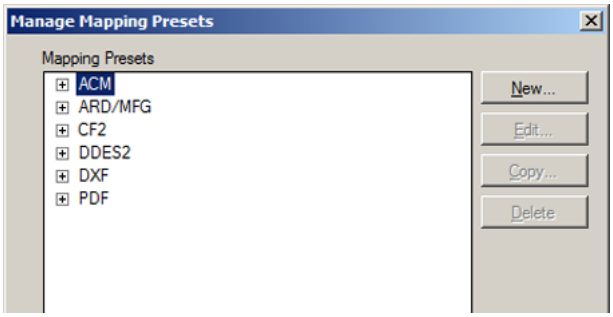
Add **Optimize Curves** functions. For details, go *here*.

Please note that for **Import Presets** there are one more **Optimizing Type** available, called "No Optimization".

This option should be selected when the geometry is already optimized for cutting in the source application, typically CAD systems like ArtiosCAD.

Mapping Import Presets

Main Menu->Advanced->Manage Presets->Mapping Presets...



+

From the list of supported **File Formats**, select actual format and press the **+** sign in front of the requested **File Format**.

The view is expanded to show all defined **Mapping Presets** for the selected format.

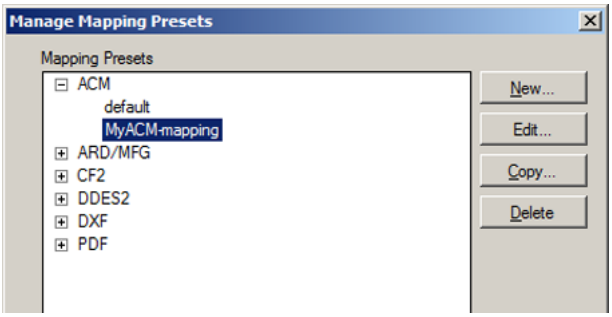
New...

Create a new **Mapping Preset**.

From the list of supported file formats, select actual format and press **New**...

For more information, go *here*.

View/Edit...



The **Default Mapping Preset** is available for viewing only.

To modify a default **Mapping Preset**, make a copy of it, edit and save it using a new name.

User Defined Mapping Presets are available for editing.

For more information, go *here*.

Copy...

Create a copy of an existing **Mapping Preset**.

From the list of supported **File Formats**, select actual format and press **Copy...**.

For more information, go *here*.

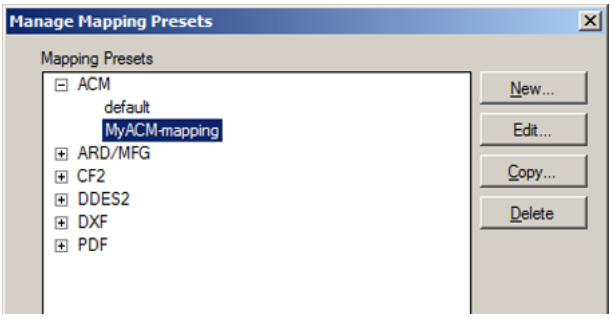
Delete

Delete the selected **Mapping Preset**.

Create a new Mapping Preset

Main Menu->Advanced->Manage Presets->Mapping Presets->New...

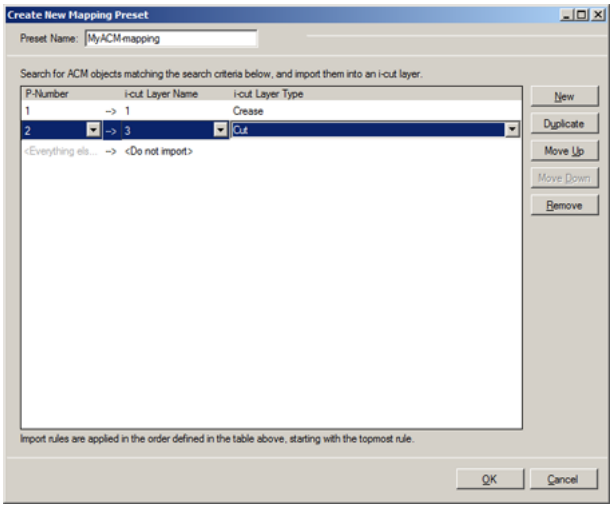
Create a new Mapping Preset



From the list of supported **File Formats**, select actual format and press **New...**

The new **Mapping Preset** will be added to the already existing **Mapping Presets** for the actual format.

Edit Mapping Preset


Create New Mapping Preset
Preset Name: MyACM-mapping
Search for ACM objects matching the search criteria below, and import them into an i-cut layer.
P-Number
i-cut Layer Name
i-cut Layer Type
1 --> 1 Crease
2 --> 3 Cut
<Everything els... --> <Do not import>
New
Duplicate
Move Up
Move Down
Remove
Import rules are applied in the order defined in the table above, starting with the topmost rule.
OK
Cancel

Mapping Preset is basically a table of rules for how to convert the **Input File** into **iPC Layers**.

There are different rules for different formats.

Preset Name

Enter a name for the new **Mapping Preset**.

New

Add a new line to the table.

Duplicate

Create a duplicate of selected line in the table in order to make a similar entry in the mapping table.

Move Up

Move selected line one step up.

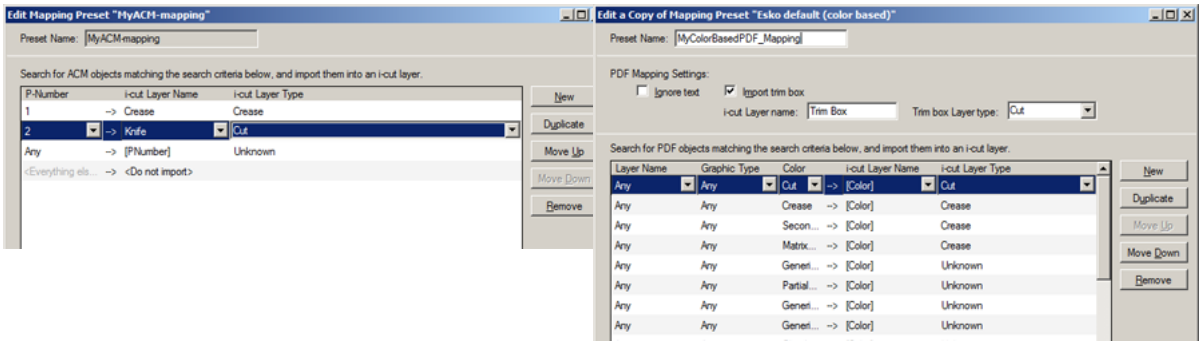
Move Down

Move selected line one step down.

Remove

Remove selected line.

Mapping Preset for different formats


Edit Mapping Preset "MyACM-mapping"
Preset Name: MyACM-mapping
Search for ACM objects matching the search criteria below, and import them into an i-cut layer.
P-Number
i-cut Layer Name
i-cut Layer Type
1 --> Crease Crease
2 --> Knife Cut
Any --> [PNumber] Unknown
<Everything els... --> <Do not import>
New
Duplicate
Move Up
Move Down
Remove
Edit a Copy of Mapping Preset "Esko default (color based)"
Preset Name: MyColorBasedPDF_Mapping
PDF Mapping Settings:
Ignore text
Import trim box
i-cut Layer name: Trim Box
Trim box Layer type: Cut
Search for PDF objects matching the search criteria below, and import them into an i-cut layer.
Layer Name
Graphic Type
Color
i-cut Layer Name
i-cut Layer Type
Any Any Cut --> [Color] Cut
Any Any Crease --> [Color] Crease
Any Any Secon... --> [Color] Crease
Any Any Matrix... --> [Color] Crease
Any Any Generi... --> [Color] Unknown
Any Any Partial... --> [Color] Unknown
Any Any Generi... --> [Color] Unknown
Any Any Generi... --> [Color] Unknown
New
Duplicate
Move Up
Move Down
Remove

ACM format Mapping Preset

PDF format Mapping Preset (color based)

Ignore text
Text in the input file is omitted

Import trim box
Specify if a trim box should be included.
Trim box = bounding rectangle.

i-cut Layer name
i-cut Layer name for trim box.

Trim box Layer type
Layer Type for trim box.

General
Input file parameters will differ, depending upon the different file formats.

i-cut Layer Name
Layer Name to use in iPC.

i-cut Layer Type
Layer Type to use in iPC.

6.7 Cutting Keys

Main Menu->Advanced->Cutting Keys

A specific setup of **Layers** can be saved for later re-use.

Such a data set is called a **Cutting Key**.

Each **Cutting Key** is identified by

- **Material**
- **Material Thickness**
- **Details** description
- **Tool** description

Please note that it is up to the user to decide which of these parameters to use and how. In particular, the **Details** parameters are designed for "free purpose".

Thus a list of **Cutting Keys** will look like this:

As seen from the illustration, a **Cutting Key** contains more fields than the selection fields.

The **Layers** parameters contained in a **Cutting Key** are not visible until the **Cutting Key** is applied to a **Job**

Use **Cutting Keys** to ensure uniform processing and repeatable quality of the products produced.

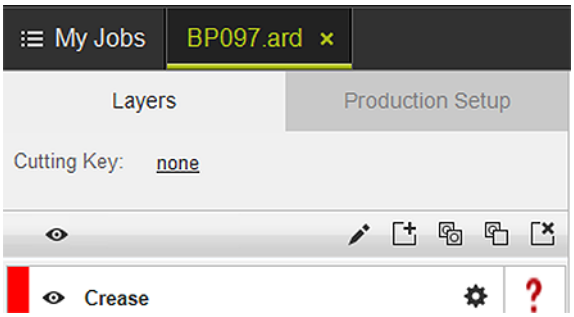
Using the features provided, you maintain a library of **Cutting Keys** for the substrates you most often produce.

iPC includes a standard library of **Cutting Keys** for common materials that may be edited and customized.

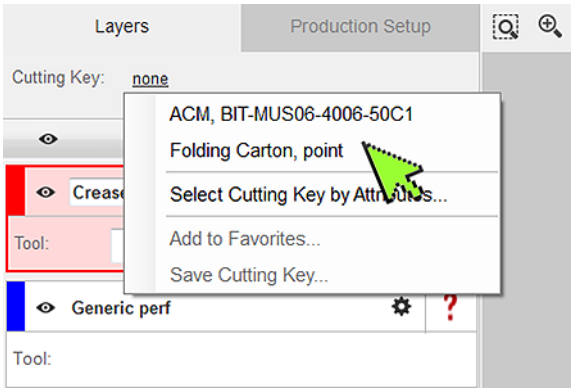
In addition, you can download new libraries from your iPC dealer.

6.7.1 Select Cutting Keys

Selected Job->Layers->Cutting Key



Click none to invoke **Cutting Key** selection dialog.



The **Cutting Keys** listed above the horisontal line are the **Favorite Cutting Keys**.

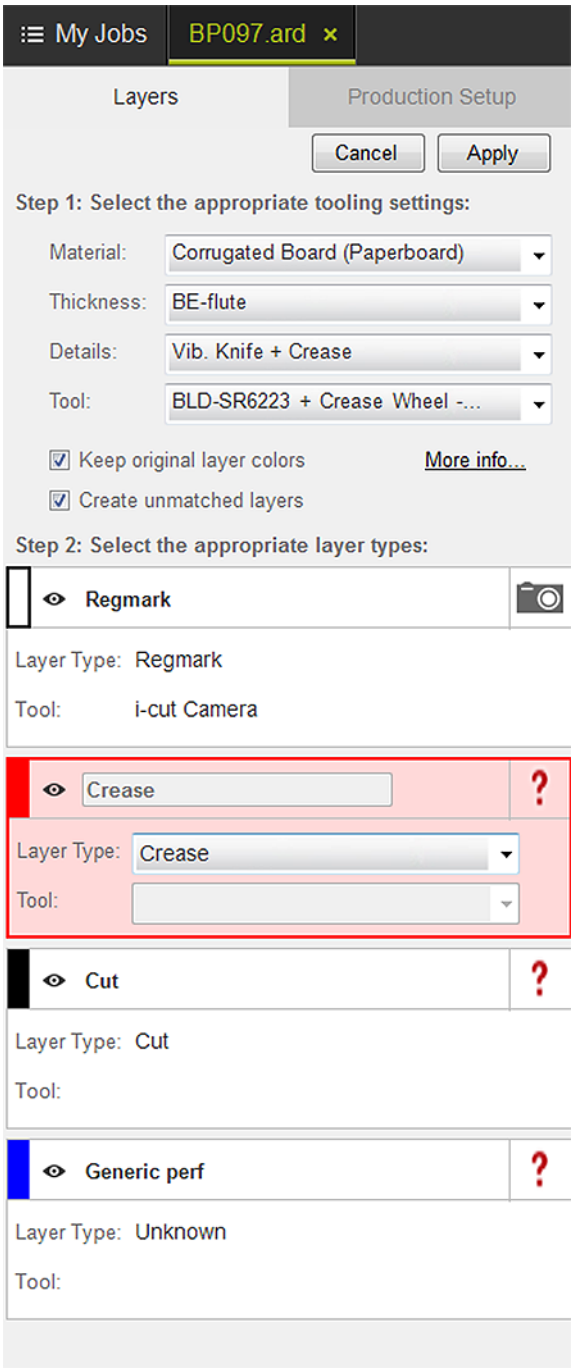
See *below* for more details.

Select Cutting Key by Attributes

If the actual **Cutting Key** is not available among the **Favorites**, you can select by **Attributes**.

Select Cutting Key by Attributes

Specify the different selection criterias in order to decide correct **Cutting Key**:



Material

From the drop down list, select the material you are about to process.

Note: If this list is empty, you have to import a set of **Cutting Keys** in order to continue.

Import Cutting Keys

Thickness

From the drop down list, select material thickness.

Details

From the drop down list, select the description that fits your job.

Tool

From the drop down list, select tooling.

Keep Original Layer Colors

When this function is selected:

Layer colors used in the Input file are kept.

Create Unmatched Layers

When this function is selected:

If the **Cutting Key** include **Layers** that is not populated from the input file / selected mapping, these **Layers** are created as empty layers. Can be useful if geometry has to be moved between **Layers** after import.

When this function is disabled:

Such data is ignored.

If the **Layer** and **Production Setup** is as wanted, you are now ready to execute the job.

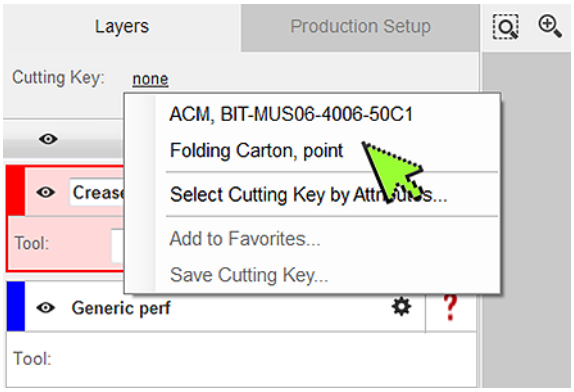
If your preferred configuration is not available as a **Cutting Key**:

- Manually edit current **Layer** settings to suit your need.
- Save it as a new **Cutting Key**:

→	**Selected Job->Layers->Cutting Key->Save Cutting Key**
→	**Main Menu->Advanced->Cutting Keys->Save as Cutting Key....**

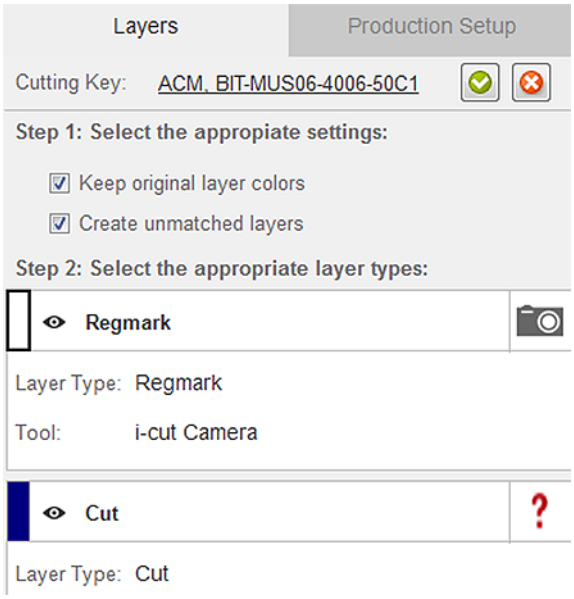
6.7.2 Favorite Cutting Keys

Select Favorite Cutting Key



The **Cutting Keys** listed above the horisontal line are the **Favorite Cutting Keys**.

From the list, select the preferred **Favorite Cutting Key**.

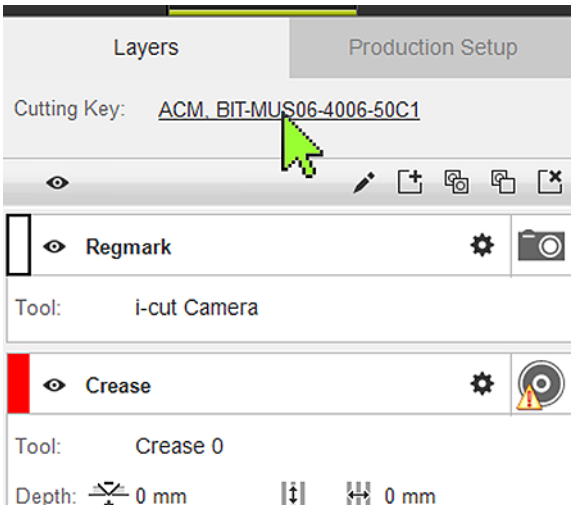


Select this Cutting Key

Press button to accept this **Cutting Key**.

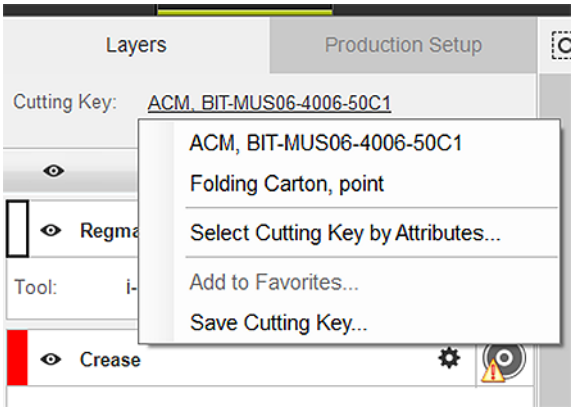
Cancel this selection

Add to Favorite Cutting Keys



Select the **Cutting Key** as described above.

Press the **Cutting Key** again to invoke the dialog:



From this dialog, you can:

Add to Favorites

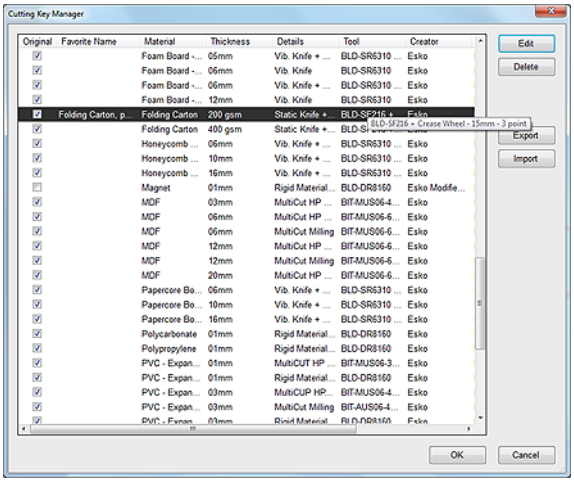
The selected **Cutting Key** will be added to list of **Favorites**.

Save Cutting Key

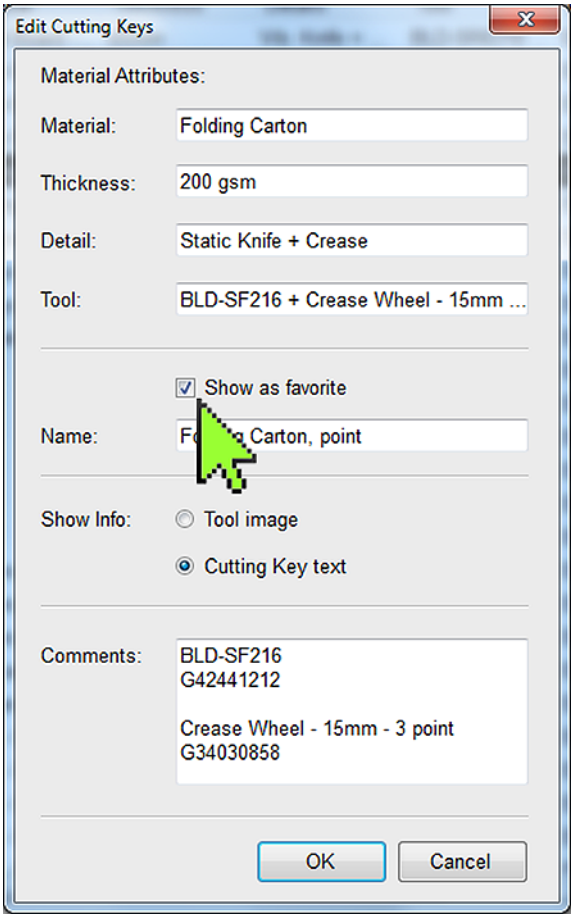
The selected **Cutting Key** will be saved.

Remove from Favorite Cutting Keys

Main Menu->Advanced->Cutting Key->Manage



1. Select the **Cutting Key** you want to remove from list.
2. Select **Edit** to enter the **Edit Cutting Key** dialog.



In the dialog, disable **Show as favorite**.

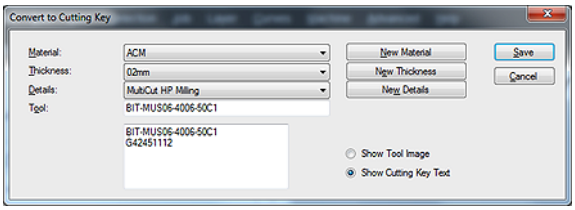
6.7.3 Create new Cutting Key

A new **Cutting Key** is created based upon **Selected Job**.

Thus, to create a new **Cutting Key**, follow these steps:

1. Open the actual **Job**.
2. Complete **Edit Layers** settings to suit your need.
3. Save the setting as a new **Cutting Key**:

➡	**Selected Job->Layers->Cutting Key->Save Cutting Key**
➡	**Main Menu->Advanced->Cutting Keys->Save as Cutting Key**....



Material From the drop down list, select material to use. If actual material is not available: 1. Click **New Material**. 2. Enter the name of the new material. 3. Click **OK**.	**Show Tool Image** Select this option if you want to illustrate this **Cutting Key** alternative using an image. Browse for the image file.
Thickness From the drop down list, select material to use. If actual thickness is not available, click **New Thickness** and enter wanted thickness. Note: To avoid creating **Cutting Keys** for each material thickness, use a more general name.	**Show Cutting Key Text** Select this option if you want to describe in more detail the content or how to use this **Cutting Key**. Enter wanted text in the edit box.
Details From the drop down list, select the details description that suits your job. If not found, click **New Details** and enter wanted details description.	**Save** Click **Save** to create the new **Cutting Key**. All **Layer** parameters are saved as part of this **Cutting Key**.
Tool Enter a description of the actual tool configuration	

6.7.4 Update Cutting Key

To modifiy an existing **Cutting Key**, follow these steps:

1. Open a job.
2. Select the **Cutting Key** to use.
3. Modify **Layers** to suit your need.
4. Apply the modifications (**Selected Job**->**Layers**->**Apply**)
5. Select the **Cutting Key** again.
6. Update the **Cutting Key** with the modified parameters:

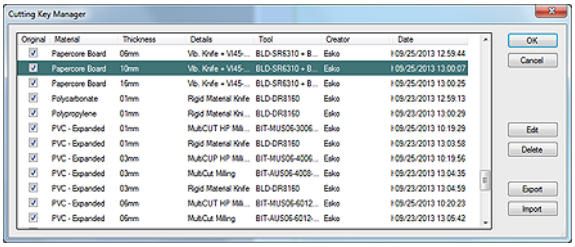
Selected Job->**Layers**->**Cutting Key**->**Save Cutting Key**...

Main Menu->Advanced->Cutting Keys->Save Cutting Key...

6.7.5 Cutting Key Manager

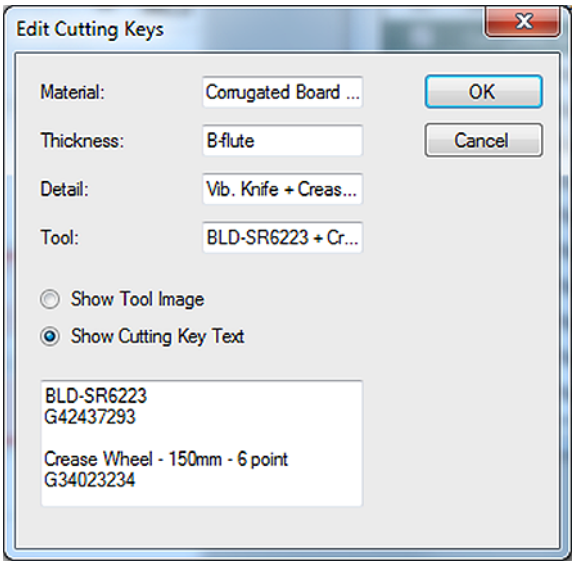
Main Menu->Advanced->Cutting Keys->Manage...

A list of all **Cutting Keys** available is displayed:



Edit

1. Select one **Cutting Key** by highlighting the actual line in the table.
2. Click the **Edit** button.
3. In the **Edit Cutting Key** dialog, update relevant information:



Material

Update material information.

Thickness

Update thickness information.

Detail

Update details description.

Tool
Update tool information.

Show Tool Image
Update if you want to illustrate this **Cutting Key** using an image.
Browse for the image file.

Show Cutting Key Text
Update if you want to describe this **Cutting Key** using text.
Enter wanted text in the edit box.

Note: To edit the **Layer Parameters**, go to ***Update Cutting Key***.

Delete

1. Select one **Cutting Key** by highlighting the actual line in the table.
2. Click the **Delete** button.

Export

Using a common set of **Cutting Keys** inside a company or between co-operating companies will standardize the production process and secure the quality of the products produced.

Use the **Export** function to distribute **Cutting Keys** used.

1. Select one or more **Cutting Keys** by highlighting the actual line(s) in the table.
2. Click the **Export** button.
3. You are asked for a destination folder and file name.

Import

For more information, see *Import Cutting Keys*.

6.7.6 Import Cutting Keys

Main Menu->Advanced->Cutting Keys->Manage...

Use this function to:

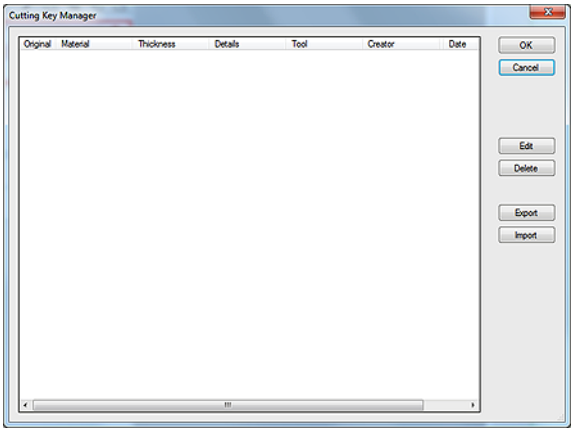
- Include **Cutting Keys** received from co-operating sites.
- Import/include **Cutting Keys** provided by the supplier.

By default, **Cutting Keys** are stored in this folder:

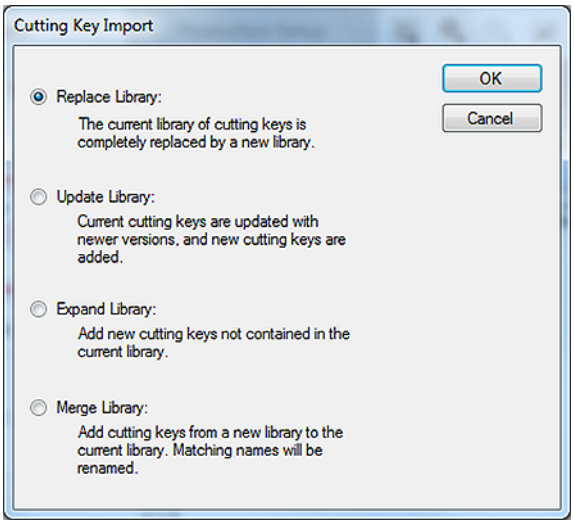
C:\Users\UserName\My Documents\i-cut Production Console\CuttingKeys

Backup **Cutting Keys** files are stored in this folder:

C:\Users\UserName\My Documents\i-cut Production Console\CuttingKeyBackup



Select **Import**


Cutting Key Import
OK
Cancel
Replace Library:
The current library of cutting keys is completely replaced by a new library.
Update Library:
Current cutting keys are updated with newer versions, and new cutting keys are added.
Expand Library:
Add new cutting keys not contained in the current library.
Merge Library:
Add cutting keys from a new library to the current library. Matching names will be renamed.

Replace Library

Current set of **Cutting Keys** is completely replaced by the imported keys.

Update Library

Existing **Cutting Keys** are updated.

New **Cutting Keys** are added.

Expand Library

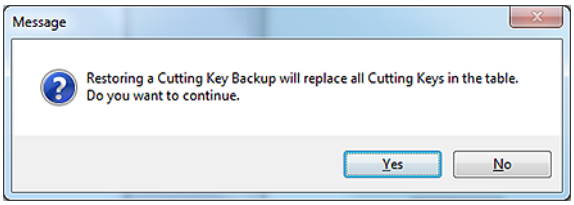
Add only new **Cutting Keys**.

Existing **Cutting Keys** are kept unchanged.

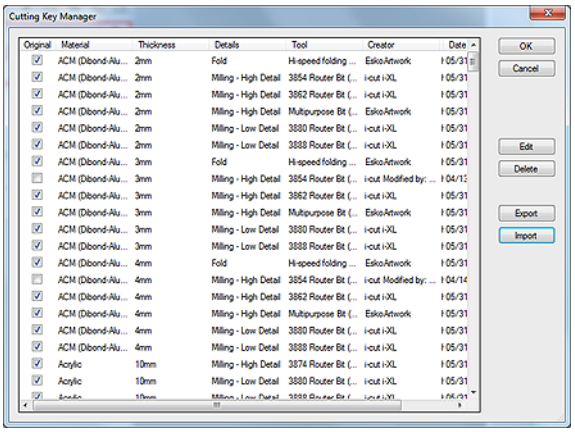
Merge Library

All imported **Cutting Keys** are added to current set of keys.

In case of conflicts, the imported **Cutting Key** name is modified.



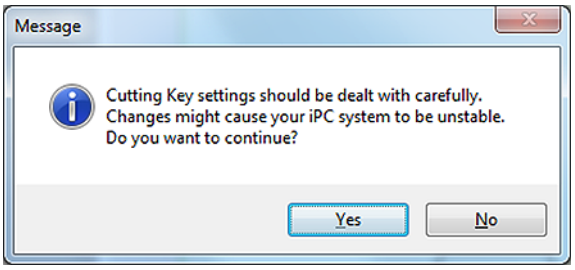
Enter Yes if ok



The list of available **Cutting Keys** is updated.

6.7.7 Global Cutting Keys

Main Menu->Advanced->Cutting Keys->Global Cutting Keys...


Message
Cutting Key settings should be dealt with carefully.
Changes might cause your iPC system to be unstable.
Do you want to continue?
Yes
No

Cutting keys are key elements in iPC.

Use **Global Cutting Keys** to standardize the workflow towards the **Cutting Table**.

Using the same **Cutting Keys** within a work group for instance, will ensure a common solution to common tasks.

Use Global Cutting Keys

Enable use of **Global Cutting Keys**.

Path

Browse for the global destination folder.

Copy Global Cutting Keys to Local

Global Cutting Keys will be copied to your local destination.

Before copy, your current local **Cutting Keys** will be backed up.

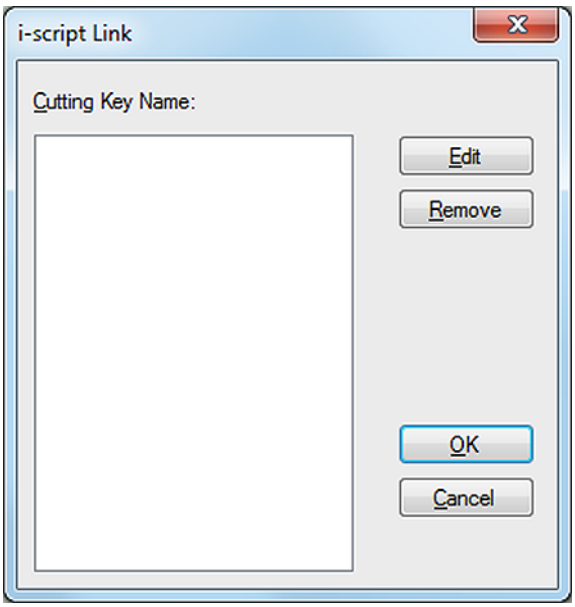
Copy Local Cutting Keys to Global

Local Cutting Keys will be copied to your global destination.

Before copy, the current **Global Cutting Keys** will be backed up.

6.7.8 i-script Link

Main Menu->Advanced->Cutting Keys->i-script Link...



Some RIP and layout applications allow you to include material names in the **i-script** files they generate for iPC.

When you open a file containing a material name in iPC, you are prompted to associate (link) that name to a specific **Cutting Key**.

Once the material name is associated, each time a file containing that material name is opened, the associated **Cutting Key** will be loaded automatically.

The **i-script** Link feature allows you to edit or remove these associations using the **i-script** Link dialog.

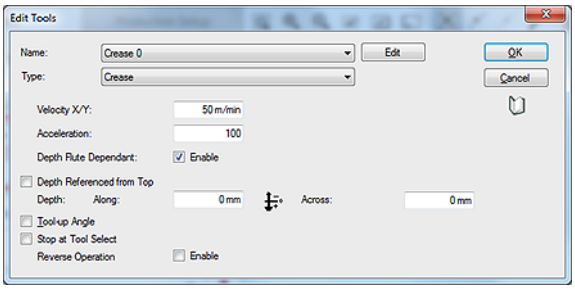
Current associations appear in the **Cutting Key** name list.

To edit or remove an association, select it, then click the **Edit** or **Remove** button.

Selecting **Edit** allows you to choose a **Cutting Key** using the standard Material/Thickness/Details/Tool menus.

6.8 Configure Tools

Main Menu->Advanced->Configure Tools



Use this function to maintain your **Tool Settings**.

The **Tool Settings** provided in this dialog will be used for the initial setting when tools are selected for the different **Layers**.

Initial settings are twofold:

1. Is the setting relevant for the tool
2. If yes, what should the default value be

Please note that these settings are carefully defined by the supplier for each tool, and should be changed by qualified personell only.

When used in a **Layer**, the **Tool Settings** can be modified to suit that particular job.

A modification of **Tool Settings** within a **Layer** will not modify the general **Tool Settings** maintained from this dialog.

The type and number of parameters in this dialog will change depending upon the selected tool.

We do not show the dialogs for each tools, but a list of parameters covering all tools is provided:

Name

From the drop-down list, select the **Tool** you want to edit.

Note: In the drop-down list, all possible tools are shown.

Normally, at a customer site, just a sub-set is available.

Type

From the drop down list, select the **Tool Type** used for this **Tool**.

For some **Tools**, correct **Tool Type** is required when using **Cutting Keys**.

Velocity

Specify the **Execution Speed** for this **Tool**.

Acceleration
Specify the **Acceleration** to be used as a % - value of maximum acceleration available.

Depth, Flute Dependant
If enabled, you can specify **Depth Across Flute** and **Depth Along Flute** independently.

Knife Overcut
Add an offset to the **Start** and **End** point of a line.
Use this function to achieve correct cut in corners.
Both positive and negative values are allowed.

Depth Referenced from Top
If enabled, depth is referenced from **Top of Material**.
If disabled, depth is referenced from **Top of Cutting Underlay**.

Depth Along
Specify cutting/creasing depth **Along Flute** direction.
Can be specified as % of **Material Thickness** or mm / inch.

Depth Across
Specify cutting/creasing depth **Across Flute** direction.
Can be specified as % of **Material Thickness** or mm / inch.

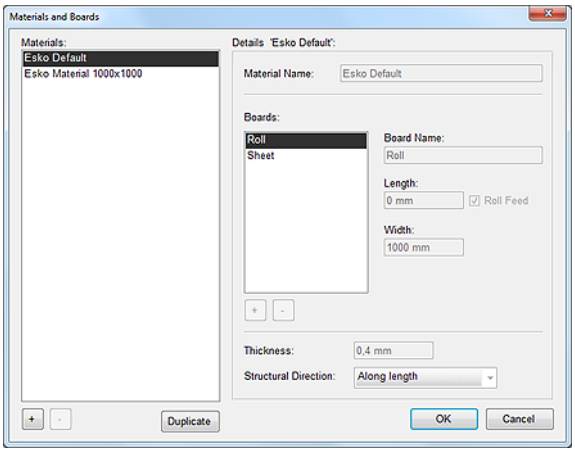
Reverse Operation
Specify if this layer should be executed on the *reverse* side of the sheet.

Tool Up Angle
If a direction change is above this angle, the tool will be lifted in the corner.

Stop at Tool Select
Execution will stop when this tool is selected; waiting for operator intervention.
In the **Edit Field**, add the text to be displayed when execution stops.
If the **Edit Field** is emptly, a default text is displayed.

6.9 Materials and Boards

Main Menu->Advanced->Materials and Boards...



In **Table View**, it is a prerequisite for correct display of job relative to the actual board, that the material and board information is correctly specified.

Use the shown dialog to select and maintain materials and boards available.

Notes:

1. For some functions, as **Nested Layout**, correct material information is mandatory.
2. This function is not fully implemented yet.

Materials	List of defined materials. • Materials do not have size.
Material Name	Name of selected material.
Boards	List of defined boards. • Boards have size. • One material can have several boards.
Board Name	Name of selected board.
Length	Length of selected board.
Roll feed	Specify if this is a roll of material.
Width	Width of selected board.
Thickness	Thickness of selected board
Structural direction	Select between: • None • Along Length • Along Width
	Add new material or board.
	Remove selected material or board
Duplicate	Duplicate selected material.

7. Get Started

Instructions about software installation is available in a separate chapter - *Install software*.

Once installation is completed, iPC may be opened for the first time.

Launch the program using the **Desktop Icon** or **Windows Start menu**.

7.1 Start Up Sequence

If the PC is connected to a **Cutting Table**, follow this start-up sequence:

1. Ensure the **Cutting Table** is free from obstructions and ready to run.
2. Power up the **Cutting Table** according to the **User Manual** for the table.
3.

From Desktop, double-click the **iPC icon**.
4. On the **Cutting Table**, complete the start-up sequence as described in the **User Manual**.
5. The iPC User Interface will now appear on the PC screen and you are ready to start.

7.2 Shut Down Sequence

Follow these steps to properly shut down your system:

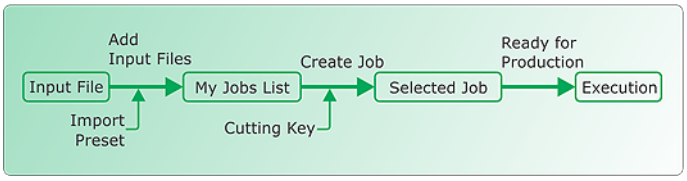
1. Shut down the **Cutting Table** according to description in the **User Manual**.
2. Close iPC using **Main Menu**->**File**->**Exit**.

8. Work Flow

There are three different ways to get ready for production:

1. Open an already prepared and saved cut file-> produce
2. Create a job using **Esko default Import Preset**.
   - Apply a **Cutting Key** or manually apply **Layer** information.
   - Optimize if necessary and produce.
3. Create a job with a customized **Import Preset**-> produce

The basic workflow is illustrated in this figure:

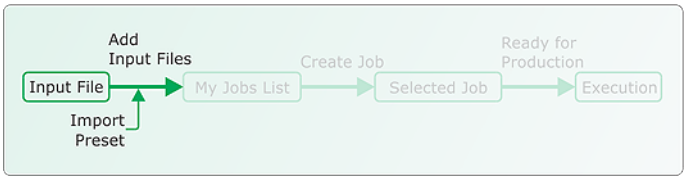


In the following chapters, each step is described.

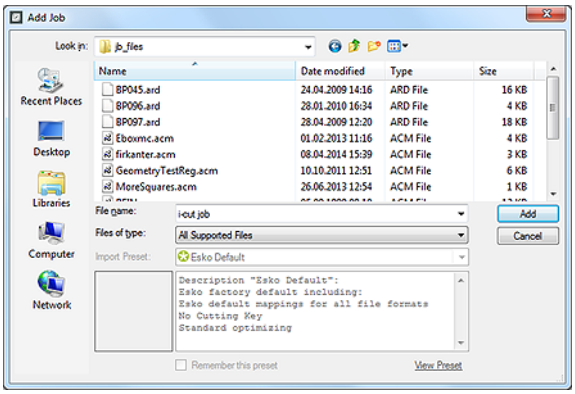
8.1 File Import

8.1.1 My Jobs List

Import Files to My Jobs List



	Main Menu->File->Add Job
	My Jobs Toolbar->Add Job
	My Jobs Bottom Toolbar->Add Job



Import Preset

Select **Import Preset** to use when importing selected **Input File**.

The different **Import Preset** selections available in the **File Open** dialog specifies different rules for how to transfer information from the **Input File** to the **iPC Job**.

The following **Import Presets** are included from factory:

Esko Default

Layer based; layers in the **Input File** are converted to **Layer Types**.

Specify default Import Preset

You can specify which Import Preset should be the default selection.

For more information, go *here*.

Create your own Import Preset

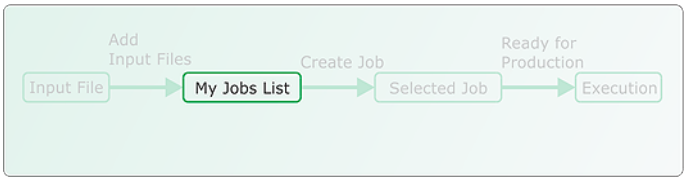
You can create your own **Import Preset** as well as copy and modify the default setup.

For more information, see ***Manage Import Presets***.

View Import Preset

This is a link to the ***Edit Import Preset*** dialog.

My Jobs List Options



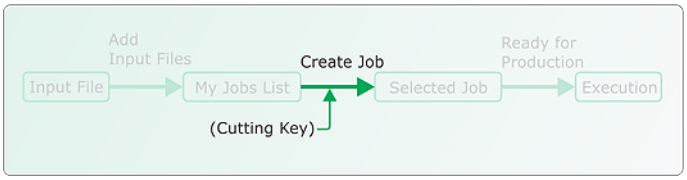
Several options are available to the files in **My Jobs List**:

- Different **List Views**

- Add or remove files from the list
- Sort by different parameters
- Different **Preview** alternatives
- Select **Import Preset**
- Create **Job**

For more information, see ***My Jobs List***.

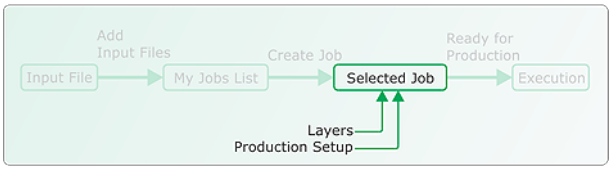
8.1.2 Create Job



	In **My Jobs List**, double-click a file.
Create Job	**My Jobs Toolbar**->**Create Job**. A new **Job** is created based upon currently selected file in **My Jobs List**.
Create Job	**My Jobs Bottom Toolbar**->**Create Job**.

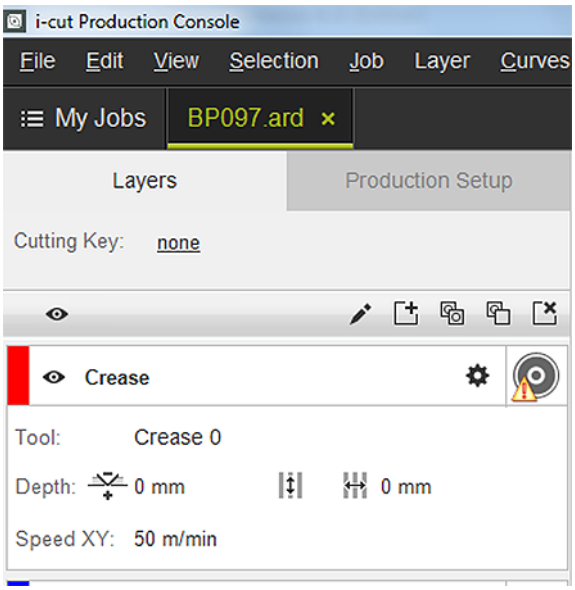
For more information, go *here*

8.2 Selected Job



	Job Bar->**Select Job**

The **Selected Job** is highlighted on the **Job Bar**:



8.2.1 Selected Job View

A range of view possibilities are available to **Selected Job**:

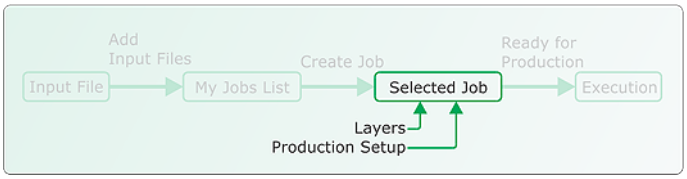
- *Define a* ***Zoom Area***
- ***Zoom In***
- ***Zoom Out***
- *Make* ***Job*** *fill the window*
- *Make the* ***Cutting Table*** *fill the window*
- ***Show Rulers***
- ***Show Curve Direction***
- ***Show Curve Points***
- ***Show Tool Path***
- ***Show Flute Direction***
- ***Show Reference Point***
- ***Show Cutting Table Rulers***
- ***Show Vacuum Zones***
- ***Show Parking Position***

8.2.2 Selected Job Edit

A range of edit possibilities are available to **Selected Job**:

- ***Job Modifications*** - edit the entire **Job**.
- ***Curve Modifications*** - edit single curves.
- ***Curve Point Modifications*** - edit single points.

8.3 Prepare for Production

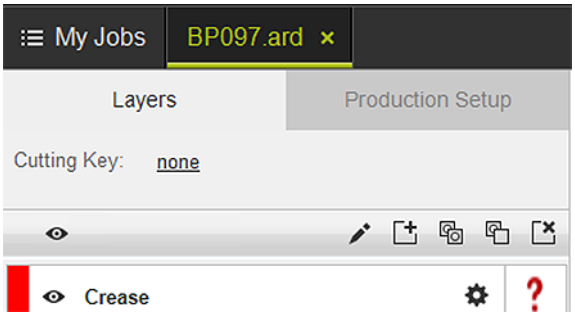


Prepare for Production consist of two main tasks:

- Ensure the **Layer** settings are proper.
- Ensure the **Production Setup** is proper.

8.3.1 Layer settings, manual

Not using **Cutting Keys**



Cutting Key:	Invoke the **Apply Cutting Key** dialog. Disable **Use Cutting Keys**.

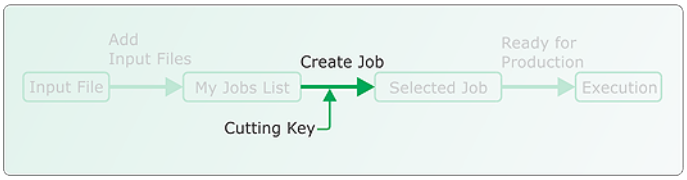
Edit **Layers**

For each **Layer**, specify the **Tool** and **Tool Parameters** to use.

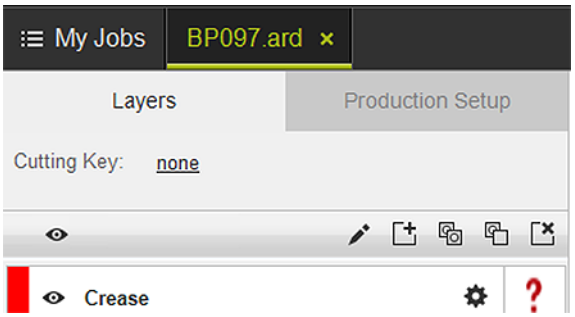
Note: **Layer Type** is not required when running without using **Cutting Keys**

For more information, see ***Selected Job, Layers***.

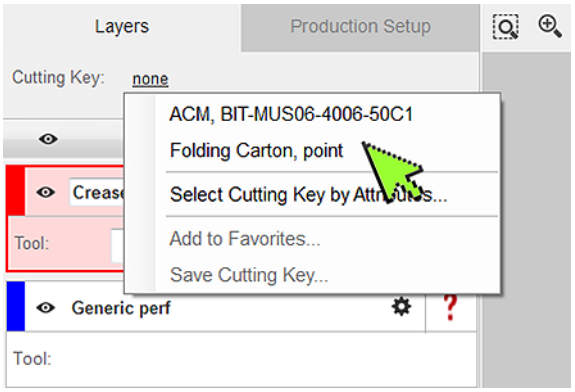
8.3.2 Layer settings using Cutting Key



Select Cutting Keys



Click none to invoke **Cutting Key** selection dialog.



The **Cutting Keys** listed above the horisontal line are the **Favorite Cutting Keys**.

Select Cutting Key by Attributes

If the actual **Cutting Key** is not available among the **Favorites**, you can select by **Attributes**.

Modify **Layers**

You can modify **Layer** settings.

For more information, see ***Selected Job, Layers***.

8.3.3 Production Setup

Number of Copies

Selected Job->Production Setup->Copies and Quality

From this dialog, set:

- **Copies** - specify number of copies to produce. *More information*.
- **Quality** - select wanted performance. *More information*.

Position

Selected Job->Production Setup->Position

From this dialog, set:

- **Reference Point** - select what **Reference Point** to use.
- **Move Job to Reference Point** - regardless the reference point used in the actual job, place the job in selected **Reference Point**.
- **Offset** - If there is an offset from selected **Reference Point** to the job, add values for X and Y.
- **Update Automatically** - The **Job Position** is updated after each copy.

For more information, go *here*.

Step and Repeat

Selected Job->Production Setup->Step and Repeat

From this dialog, specify the number of copies along X and Y to be laid out on one **Table**.

Specify **Step** or **Gap** values.

For more information, go *here*.

Registration

Selected Job->Production Setup->Registration

HW

From this dialog, specify:

- **Registration Type** - select to use **Registration Marks** or **Edge Detection**.

Use **Registration Marks**

- **Compensation Type** - select **Compensation Type**.
- **Search Area** - select the size of the area where the camera will search for **Registration Marks**.
- **Ask Confirmation for First Mark** - on the first **Registration Marks** in a job, always wait for confirmation.
- **Adaptive Registration** - Select if registration optimization is wanted; high **Speed** or high **Accuracy**.

Use **Edge Recognition**

- **Sheet Position** - specify the distance from **Main Reference Point** to the surrounding rectangle for the job.
- **Check Edge Distance** - specify the measuring distance to be used.
- **Check Direction** - select which direction to measure.

For more information, go *here*.

Material Handling

Selected Job->Production Setup->Material Handling

From this dialog, specify functions for **Conveyor Feed** operations:

- **Table Preset** - Select the **Table Preset** function to use.
- **Feed to front of table** - the sheet is moved to the front of the **Cutting Table**. (**Table Preset** dependant)
- **Sheet Feeding Length** - specify the lenght to feed the material. (**Table Preset** dependant)
- **Pre-load Sheets** - specify how many sheets to pre-load before execution start. (**Table Preset** dependant)
- Skip table if **Registration Mark** is not found - specify to avoid unwanted stops. (**Table Preset** dependant)
- **Skip Table After** - adding a delay allows the operator to fix the problem. (**Table Preset** dependant)
- **Material Mesurement** - decide how to carry out the measuring sequence.

For more information, go *here*.

Tool Head Parking

	Selected Job->Production Setup->Tool Head Parking

Specify a park position after **Job** is finished.

For more information, go *here*.

8.4 Save Job

At any stage in the **Prepare for Production** process, you can save the **Selected Job** for later use:

	Main Menu->File->Save Job
	Main Menu->File->Save Job As...

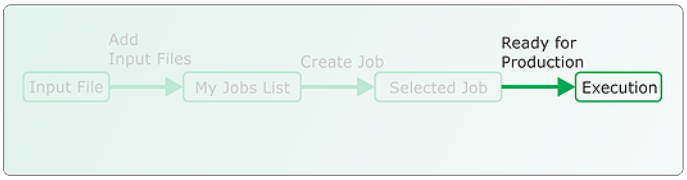
Selected Job will be saved using iPC .cut file format.

It is recommended to save the job when any modifications to **Layers**, **Production Setup** or geometry is changed within iPC.

All relevant information is kept in the .cut format, which is not the case for any external format.

To open a saved **Job File**, use the standard **File Open** functions.

8.5 Running a Job



8.5.1 Execute a Job

To start a **Selected Job**, press ***Start*** on **Operators Panel**.

Execution will start if:

- The Cutting Table is up and running, ready for execution
See **Cutting Table User Manual**.

- The Job is properly prepared
See ***Ready for Execution***.

8.5.2 No Registration

These are the specific steps to follow to execute a **Job** not using **Registration Marks**:

1. The **Job** contains no **Regmark Layer**.
2. Place the **Sheet of Material** onto the **Cutting Table**.
3. If you use a **Fixed Reference Point**, position the **Sheet of Material** correct relative to the reference point. If available, we recommend using **Table Rulers** for this purpose.
4. If **User Defined Reference Point** is used, ensure the reference point is correctly positioned on the sheet.

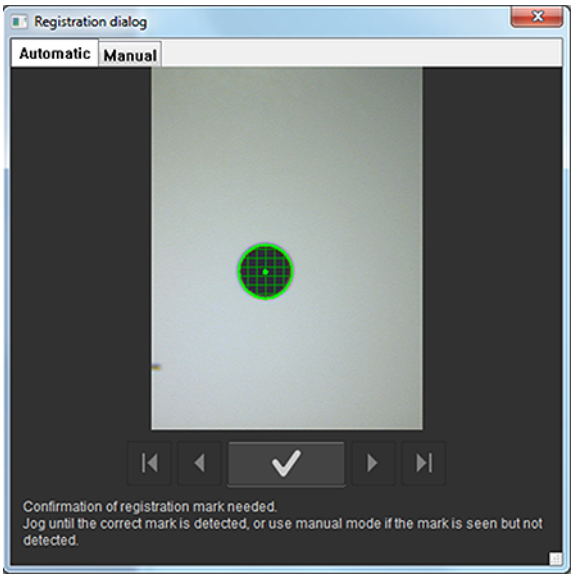
For more information, see **Cutting Table User Manual**.

8.5.3 Reading Registration Marks

These are the specific steps to follow to execute a **Job** using **Registration Marks**:

1. The **Job** contains a **Regmark Layer** with **Tool Type** = **Camera**.
2. **Registration** using **Registration Marks** is enabled.
3. A proper **Compensation Type** is selected.

Confirm Registration Mark


Registration dialog
Automatic
Manual
Confirmation of registration mark needed.
Jog until the correct mark is detected, or use manual mode if the mark is seen but not detected.

Select between:

- Automatic camera detection
- Manual registration

It is important that the **Registration Mark** found on the material is the same as the one highlighted in **Job View**

Jog to the correct mark, by keyboard arrows, or by **Operator panel**.

Confirm when correct mark is found.

	Confirm that this is correct **Registration Mark** The same confirmation is available as: • **Enter** from PC keyboard. • *Start* on **Operator Panel**.
	Move between **Registration Marks**
	Move to the last **Registration Mark**
	Move to the first **Registration Mark**

8.5.4 Registration using Laser Pointer

These are the specific steps to follow to execute a **Job** using **Registration Marks** and **Laser Pointer**:

1. The **Job** contains a **Regmark Layer** with **Tool Type** = **Laser Pointer**.
2. **Registration** using **Registration Marks** is enabled.
3. A proper **Compensation Type** is selected.

For more information, see **Cutting Table User Manual**.

8.5.5 Edge Recognition

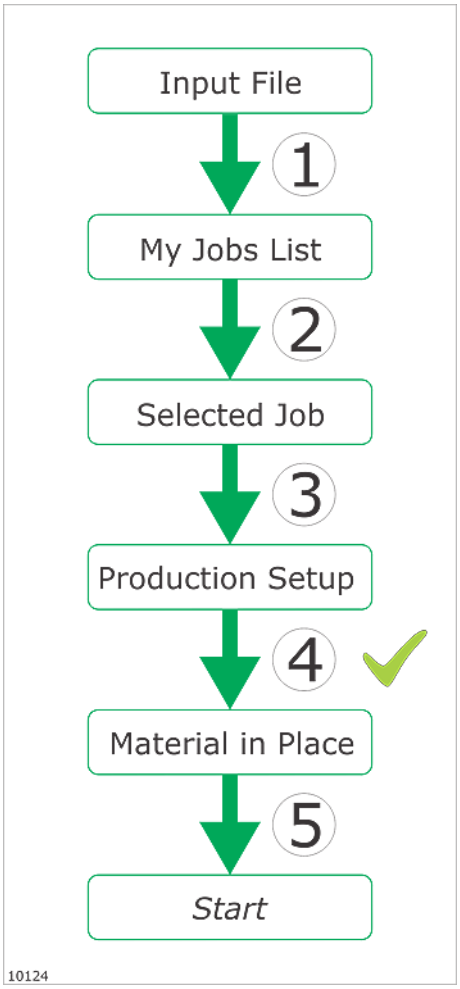
These are the specific steps to follow to execute a **Job** using **Edge Recognition**:

1. The **Job** has a defined distance between **Sheet Edge** and geomety (surrounding rectangle).

   The distance is entered as **Production Setup->Position->Offset**.
2. **Registration** using **Edge Recognition** is enabled.

For more information, see **Cutting Table User Manual**.

9. Optimal Production Workflow



Standardize each step to achieve the **Optimal Production Workflow**:

1 Import Input File

Combine **Import Preset** and **Cutting Key**

2 Create Job

Use **Cutting Key** to establish correct **Layer** configuration.

3 Modify Production Setup.

The Job is ready for execution.

4 Ensure material is in place

Sheets of Material - Vacuum hold down

Roll Feed - Enter material

Sheet Feeder - Load material

5 Press *Start* to execute

10. Edit Job, Advanced

All drawing and editing of curves is normally completed in the CAD system / Job Preparation software used before the file is imported to iPC.

Although iPC is not intended to be a design program, it does provide some basic tools for making minor corrections to imported files.

The tools are grouped into three different levels:

- ***Job Modifications***
- ***Curve Modifications***
- ***Curve Point Modifications***

10.1 Job Modifications

The **Job Modification** functions will modify the **Selected Job** as one entity.

10.1.1 Rotate 90 deg. CW

Main Menu->Job->Rotate 90 deg CW

Selected Job is rotated.

10.1.2 Rotate 90 deg. CCW

Main Menu->Job->Rotate 90 deg CCW

Selected Job is rotated.

10.1.3 Mirror Horizontal

Main Menu->Job->Mirror Horizontal

Selected Job is mirrored.

10.1.4 Mirror Vertical

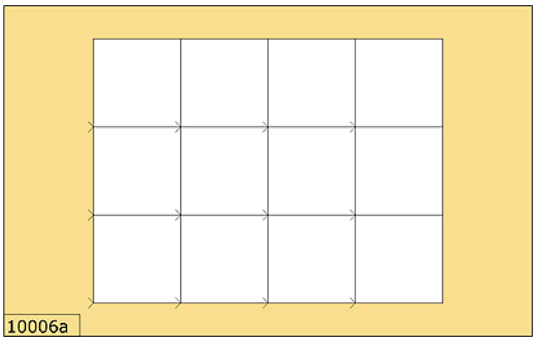
Main Menu->Job->Mirror Vertical

Selected Job is mirrored.

10.1.5 Remove Double Lines and Sequence

Main Menu->Job->Remove Double Lines and Sequence

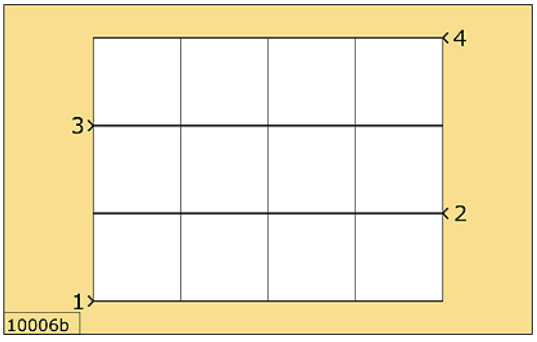
To explain this function, we use an example:



We have a job that consist of a set of squares, programmed to be completed one by one.

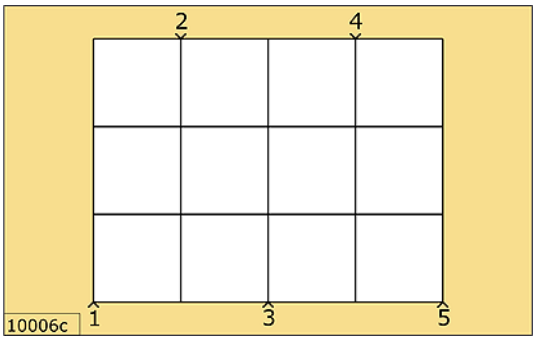
Use the **Remove Double Lines and Sequence** function to:

- Improve cutting quality by removing double lines.
- Improve cutting quality by reducing number of corner passings.
- Increase overall performance by reducing tool operations and corner passings.
- Increase overall performance by reducing tool up movements.



Line segments along a straight line will be executed one by one.

All X-axis lines will be executed first.

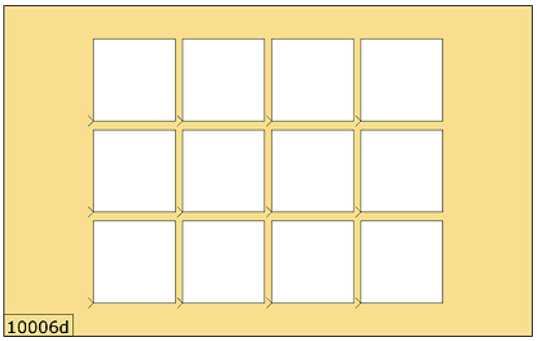


Subsequently, the Y-axis lines will be executed.

10.1.6 Remove Double Lines and Join Across Gaps

Main Menu->Job->Remove Double Lines and Join Across Gaps

To explain this function, we use an example:



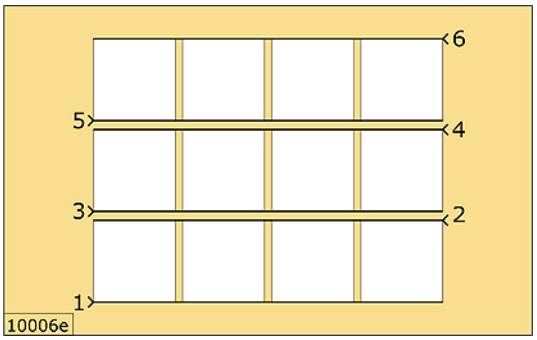
We have a job that consist of a set of squares, designed to be completed one by one.

Between each square, there is a gap.

Lines can be extended across gaps as this area is waste.

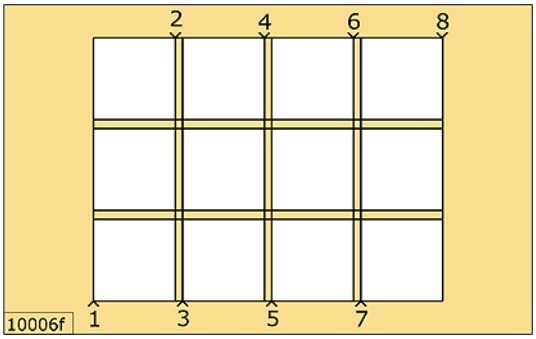
Use the **Remove Double Lines and Join Across Gaps** function to:

- Improve cutting quality by removing double lines.
- Improve cutting quality by reducing number of corner passings.
- Increase overall performance by reducing tool operations and corner passings.
- Increase overall performance by reducing tool up movements.



Line segments along a straight line will be combined into one, continous line.

All X-axis lines will be executed first.



Subsequently, the Y-axis lines will be executed.

Note: The maximum gap size for this function to work is 1 mm / 0.04 in.

10.1.7 Optimize for Production

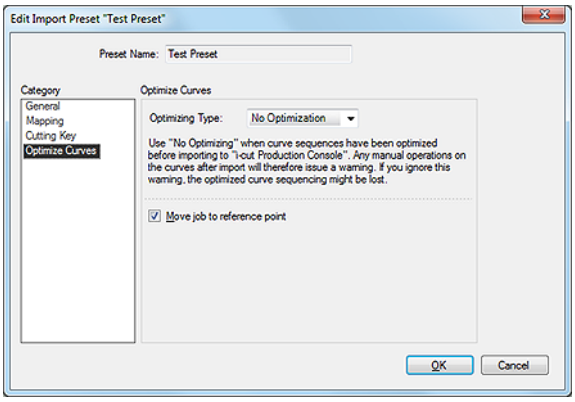
Main Menu->Job->Optimize for Production

In the **Optimize for Production** dialog, select **Optimizing Type**:

- *Standard*
- *Sample Making*

Note: **Optimizing Type = No Optimization** selection is available only as part of **Import Preset**.

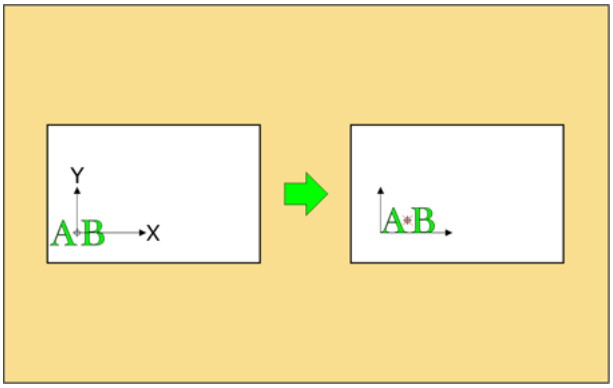
No Optimization


Edit Import Preset "Test Preset"
Preset Name: Test Preset
Category
General
Mapping
Cutting Key
Optimize Curves
Optimize Curves
Optimizing Type: No Optimization
Use "No Optimizing" when curve sequences have been optimized before importing to "i-cut Production Console". Any manual operations on the curves after import will therefore issue a warning. If you ignore this warning, the optimized curve sequencing might be lost.
Move job to reference point
OK
Cancel

Use "No Optimizing" when curve sequences have been optimized before importing to iPC.

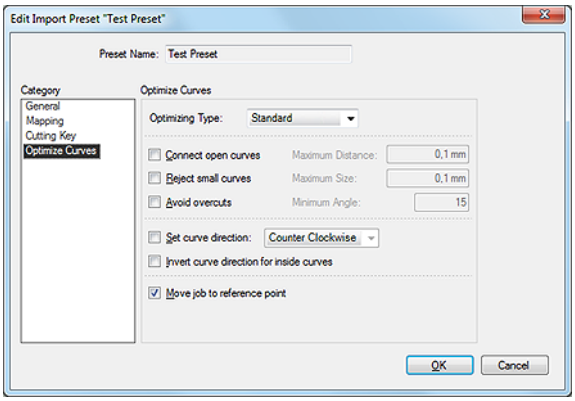
Any manual operations on the curves after import will therefore issue a warning. If you ignore this warning, the optimized curve sequencing might be lost.

Move Job to Reference Point



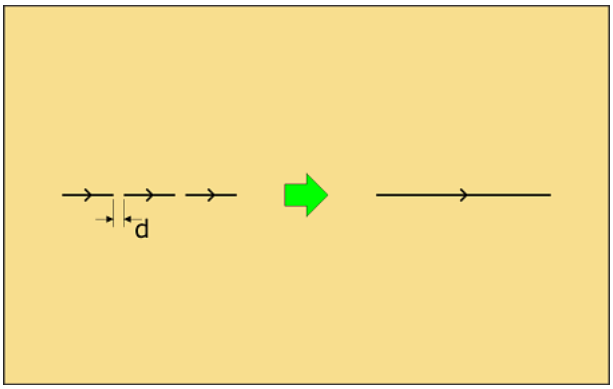
The lower left corner of the job will be placed in currently selected **Reference Point**.
Any offset from (0,0) used in the **Input File** is ignored.
Use this function to place the **Job** correctly on your material.

Optimize, Standard



Standard Optimization is mainly used to optimize files used in a graphical workflow.

Connect Open Curves



Curve segments that are close to each other are connected.
Select **Connect Open Curves** to:

- Increase performance.

- Improve cutting quality.

Specify d = **Maximum Distance** where curve connection is allowed.

Reject Small Curves

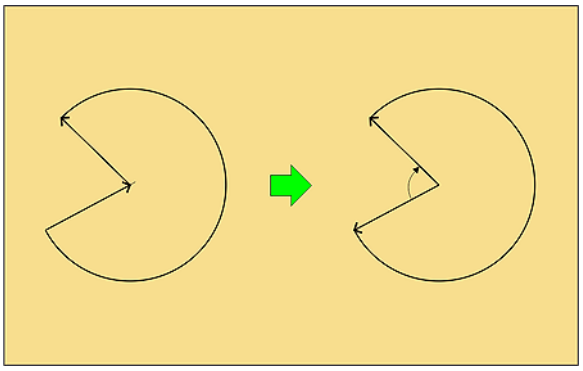
Small, freestanding curve elements are omitted.

Select **Reject Small Curves** to:

- Remove unwanted curves and stray points.
- Increase performance.
- Improve cutting quality.

Specify d = **Maximum Size** of a curve segment that can be omitted.

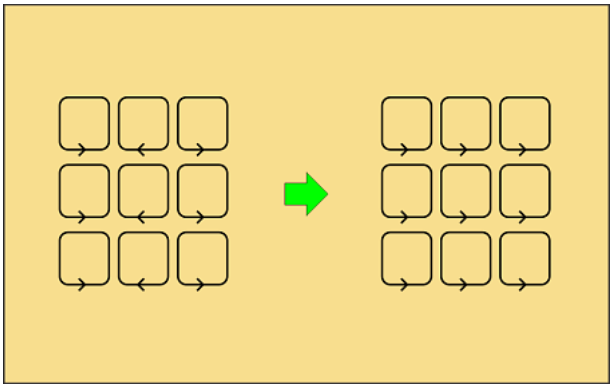
Avoid Overcuts



The cut direction will be modified if the angle is above a specified limit.

This to avoid visible knife overcuts.

Set Curve Direction



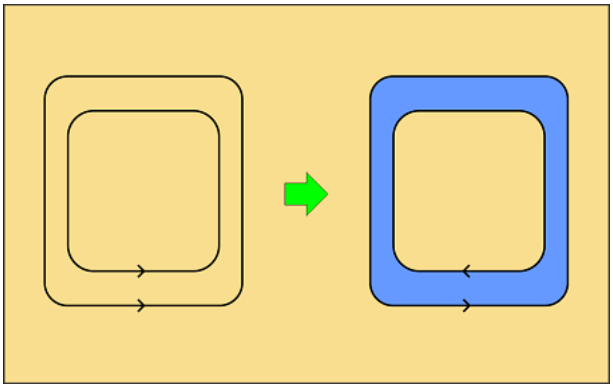
Specify an overall rule for curve execution direction.

Typical use:

Often, when milling, the left side of the path has a smoother surface compared to the right side.

Use this function to optimize the quality of your product.

Invert Curve Direction for Inside Curves

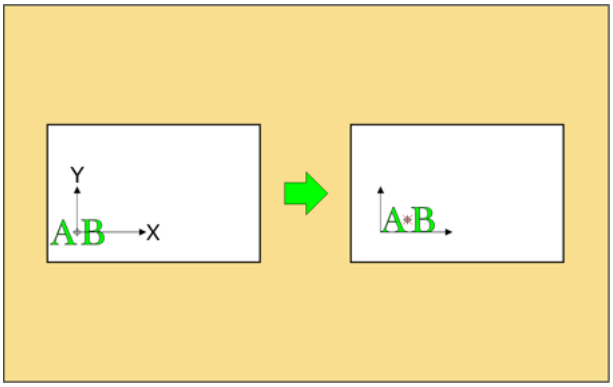


Specify an overall rule for curve execution direction.

This is an extension to the **Set Curve Direction** function, see above.

If the blue part is your product and you want a smooth surface outside and inside, you have to invert the curver direction for the inner curve.

Move Job to Reference Point



The lower left corner of the job will be placed in currently selected **Reference Point**.

Any offset from 0,0 used in the **Input File** is ignored.

Use this function to place the **Job** correctly on your material.

Optimize, Sample Making

Optimize for Sample Making is normally used to achieve maximum cutting and creasing quality for **Corrugated** and **Folding Carton** designs.

Please note that:

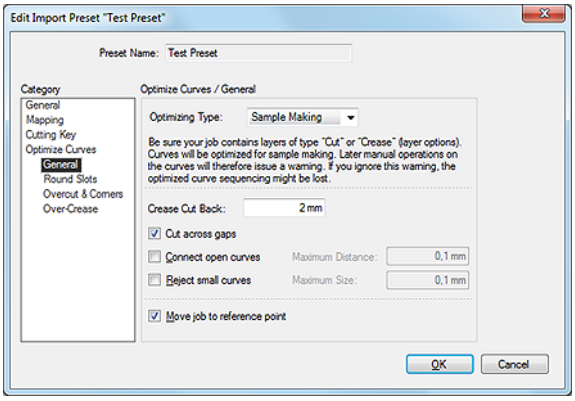
- Most **Sample Making** operations will be applies on **Layer Type** Cut and Crease only.
- The relevance of this feature is dependant upon whether any optimization is performed during output from the CAD / Job Preparation software.

Features available in **Optimize for Sample Making** are similar to optimizing features in ArtiosCAD from Esko.

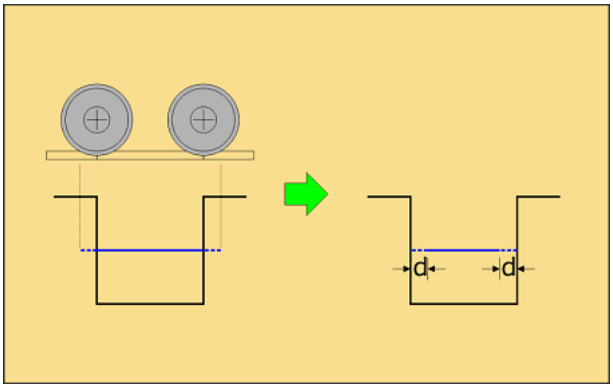
Select parameters in the following **Categories**:

- *General* - general optimizing functions.
- *Round Slots* - functions to avoid tear in narrow slots.
- *Overcut & Corners* - functions to avoid tear and overcut in corners.
- *Over-Crease* - functions to improve performance during crease.

General


Edit Import Preset "Test Preset"
Preset Name: Test Preset
Category
General
Mapping
Cutting Key
Optimize Curves
General
Round Slots
Overcut & Corners
Over-Crease
Optimize Curves / General
Optimizing Type: Sample Making
Be sure your job contains layers of type "Cut" or "Crease" (layer options). Curves will be optimized for sample making. Later manual operations on the curves will therefore issue a warning. If you ignore this warning, the optimized curve sequencing might be lost.
Crease Cut Back: 2 mm
Cut across gaps
Connect open curves
Maximum Distance: 0,1 mm
Reject small curves
Maximum Size: 0,1 mm
Move job to reference point
OK
Cancel

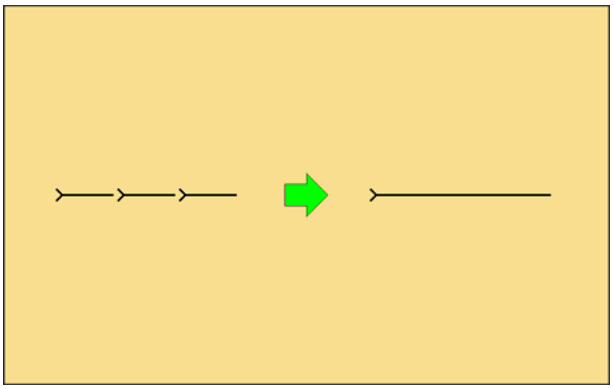
Crease Cut Back



Increased crease quality; avoid crease line outside wanted position.

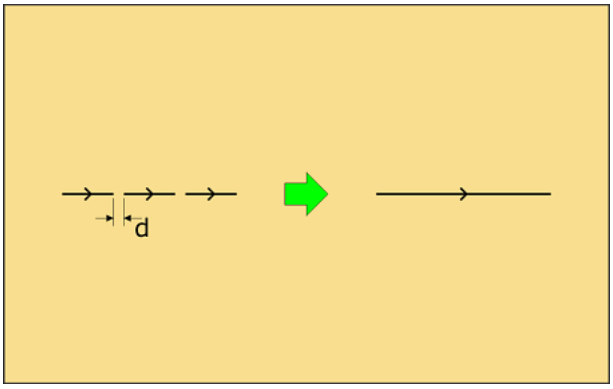
d - distance to use when shortening the crease lines.

Cut Across Gaps



Increased performance.

Connect Open Curves



Curve segments that are close to each other are connected.

Select **Connect Open Curves** to:

- Increase performance.
- Improve cutting quality.

Specify d = **Maximum Distance** where curve connection is allowed.

Reject Small Curves

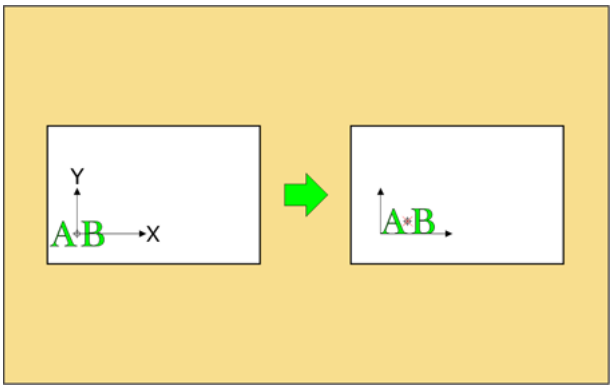
Small, freestanding curve elements are omitted.

Select **Reject Small Curves** to:

- Remove unwanted curves and stray points.
- Increase performance.
- Improve cutting quality.

Specify d = **Maximum Size** of a curve segment that can be omitted.

Move Job to Reference Point

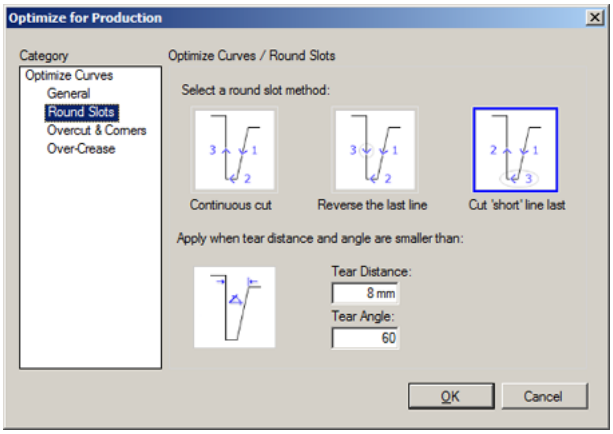


The lower left corner of the job will be placed in currently selected **Reference Point**.

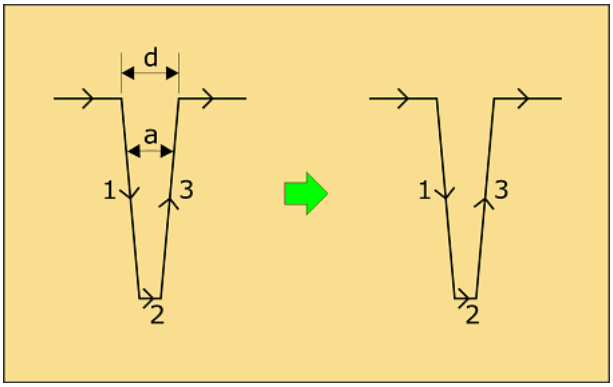
Any offset from 0,0 used in the **Input File** is ignored.

Use this function to place the **Job** correctly on your material.

Round Slots



Round Slot Method, Continous Cut

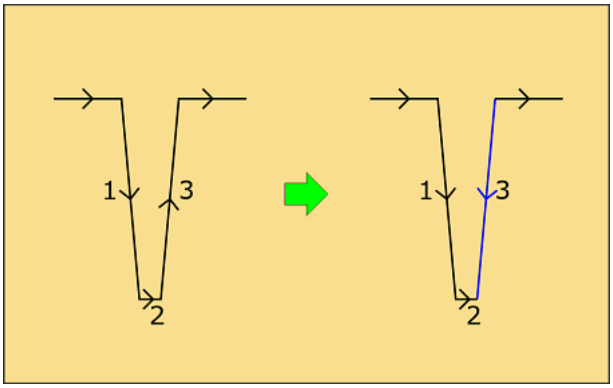


Risk for material tear.

d - **Tear Distance**. The maximum distance where the Round Slot Method will work.

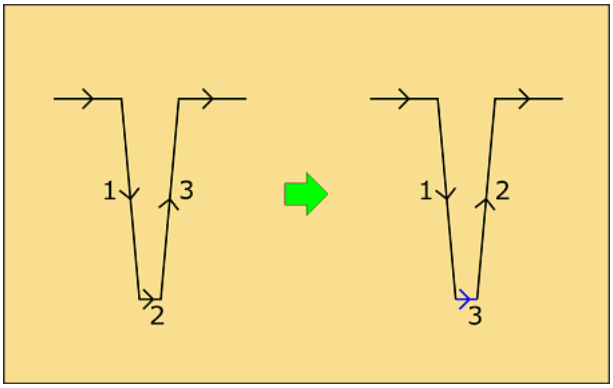
a - **Tear Angle**. The maximum angle where the Round Slot Method will work.

Round Slot Method, Reverse Last Line



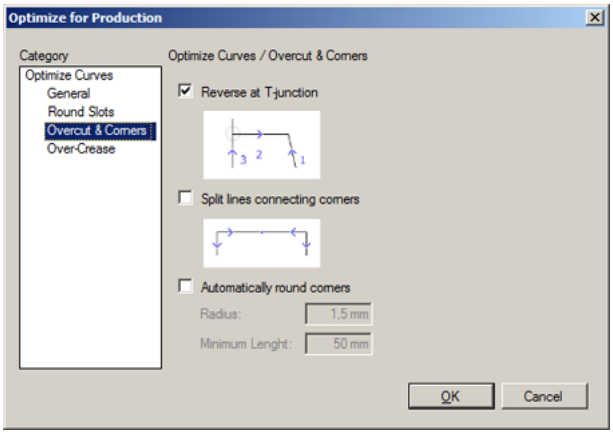
Risk for material tear is reduced.

Round Slot Method, Cut "Short" Line Last

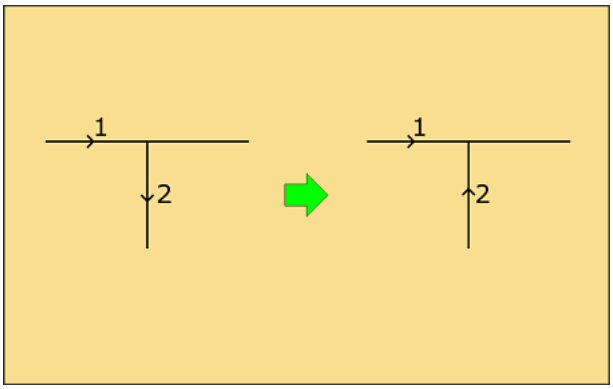


Risk for material tear is reduced.

Overcut & Corners

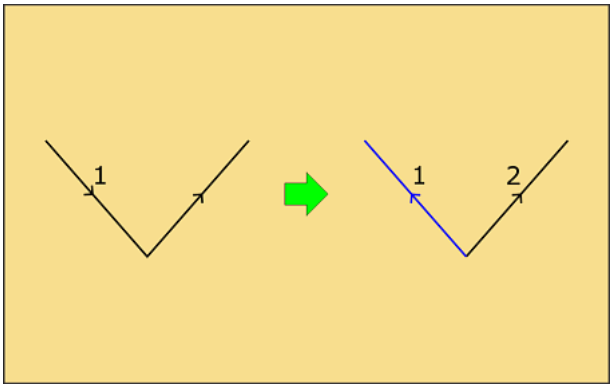


Reverse at T-junctions



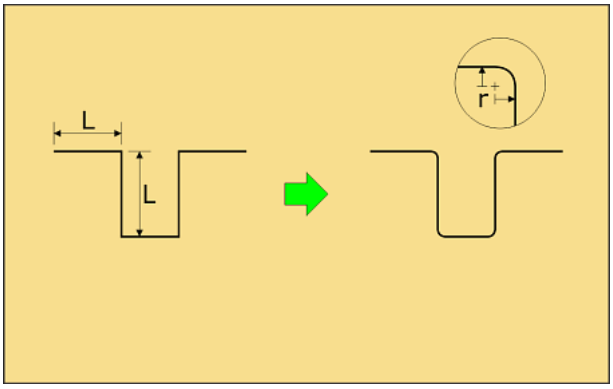
Risk for material tear is reduced.

Split Lines connection Corners



Improve cutting quality in corners.

Automatically Round Corners

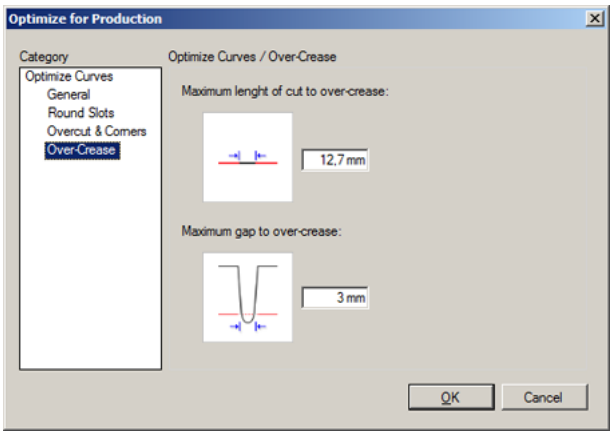


Improve cutting quality in corners.

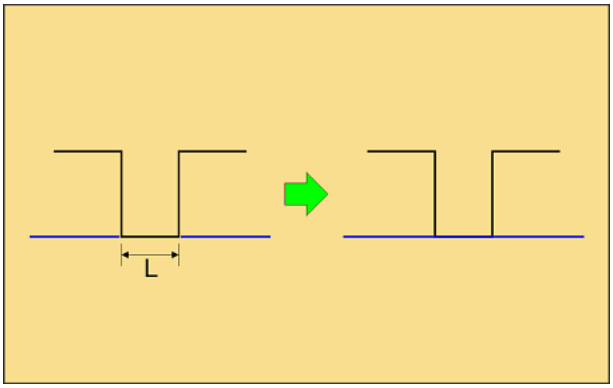
r - **Radius**. Corner radius.

L - **Length** of adjacent line segments. This function will work on corners where L is above specified value.

Over-Crease



Maximum Length of Cut to Over-crease

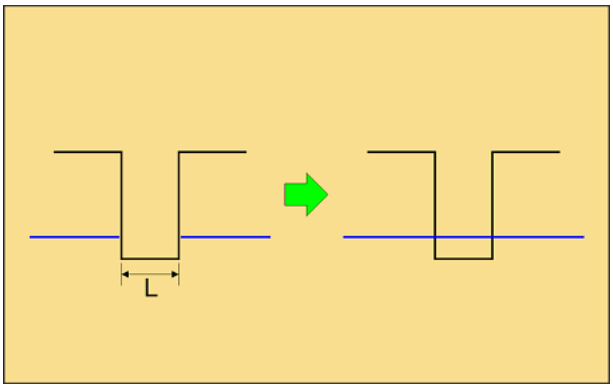


A crease line will continue on top of a cut line.

Increased performance.

L - Maximum length of line element where this function will work.

Maximum Gap to Over-crease



A crease line will continue across a gap.

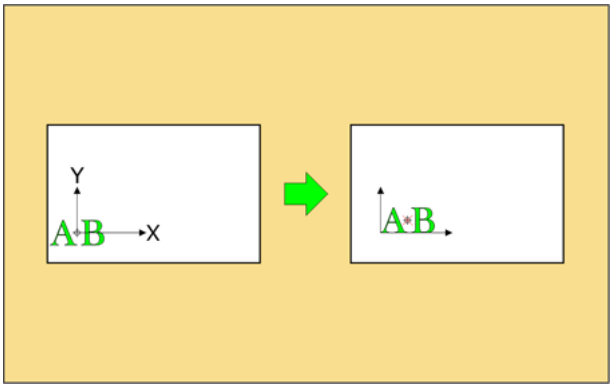
Increased performance.

L - Maximum length of gap where this function will work.

10.1.8 Move Job to Reference Point

Main Menu->**Job**->Move Job to **Reference Point**

Move Job to Reference Point



The lower left corner of the job will be placed in currently selected **Reference Point** + **Offset**, both defined in **Production Setup**.

Any offset from 0,0 used in the **Input File** is ignored.

Use this function to place the **Job** correctly on your material.

10.1.9 Move Open Curves to Separate Layer

Main Menu->**Job**->Move Open **Curves** to **Separate Layer**

Some functions, as **Wash Out** using the **Milling Tool**, requires closed curves in order to operate properly.

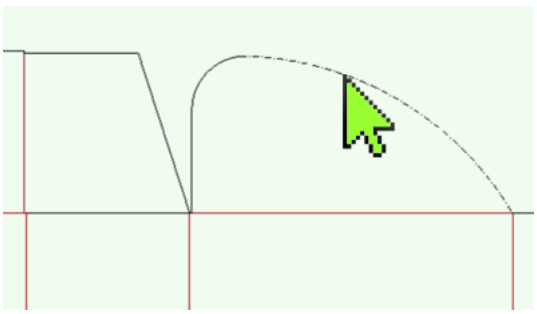
Use this function to separate **open curves** from **closed curves**.

10.2 Curve Modifications

Curve Modifications are carried out on **Selected Curve(s)** in a **Selected Job**.

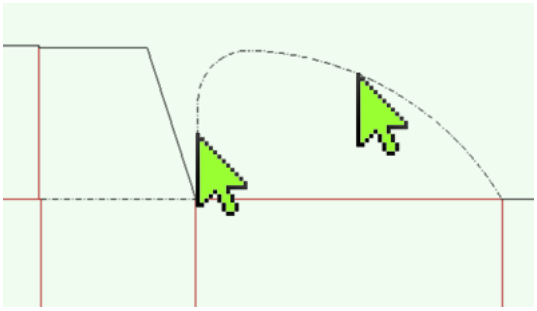
10.2.1 Select a Curve

Select one Curve



Using the **Mouse Pointer**, select the curve you want to modify.
The **Selected Curve** is highlighted.

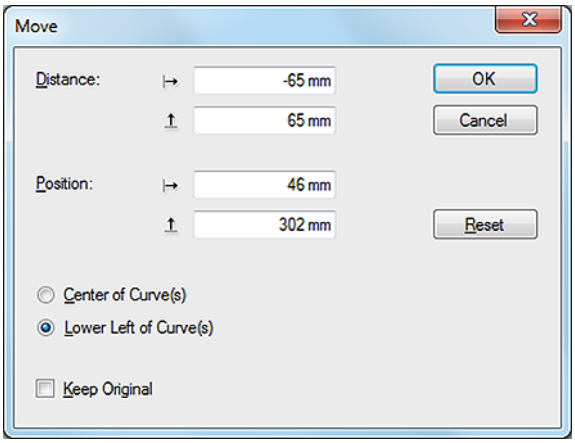
Select Multiple Curves



1) While **Ctrl** is active, use the **Mouse Pointer** to select the curves you want to modify.
2) Use the **Mouse Pointer** to draw a rectangle around wanted curves.
The **Selected Curves** are highlighted.

10.2.2 Move...

	Main Menu->Curves->Move...
	Ctrl+M



	The indicated direction refers to the selected **Table View Orientation**. If standard view is selected, this is the +X direction.
	If standard view is selected, this is the +Y direction.

Select between **Distance** or **Position**:

Distance

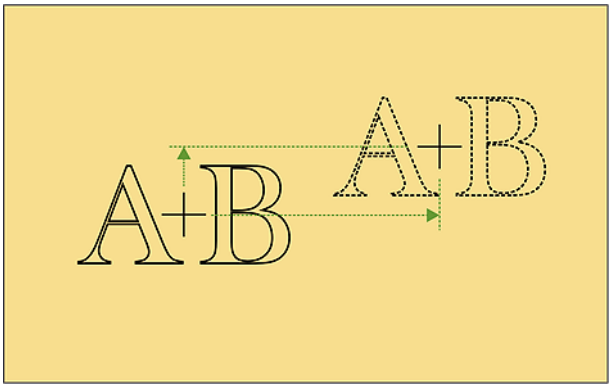
Specify the distance to move the **Selected Curve(s)**.

Position

Specify the new coordinates (X and Y) for the **Selected Curve(s)**.

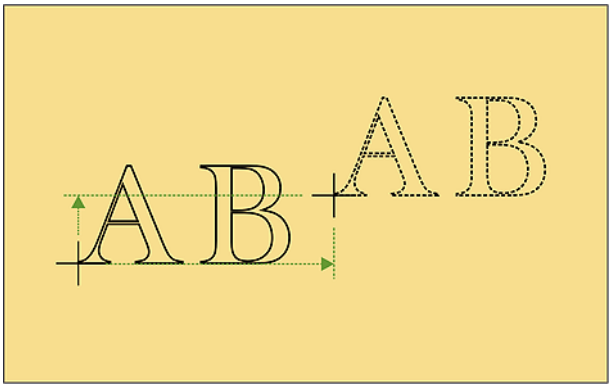
Center of Curve(s)

The coordinates specified are relative to the center of the **Selected Curve(s)**:



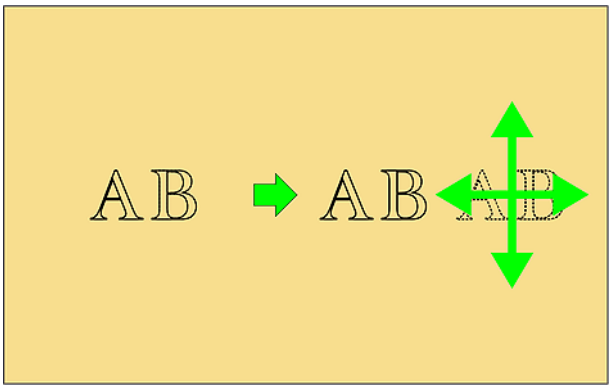
Lower left of Curve(s)

The coordinates specified are relative to the lower left corner of the **Selected Curve(s)**:



Keep Original

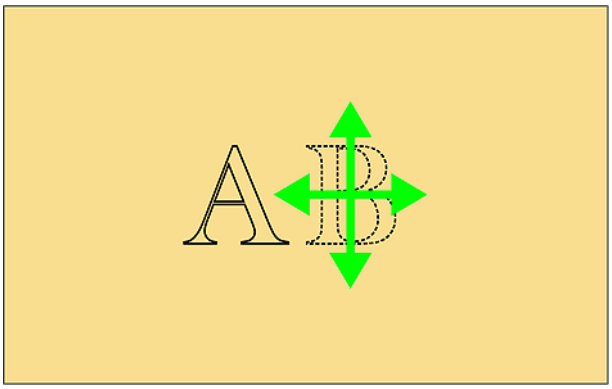
The original, **Selected curve(s)** are kept unchanged. A copy of the **Selected curve(s)** is made, ready to be moved:



10.2.3 Jog Curves

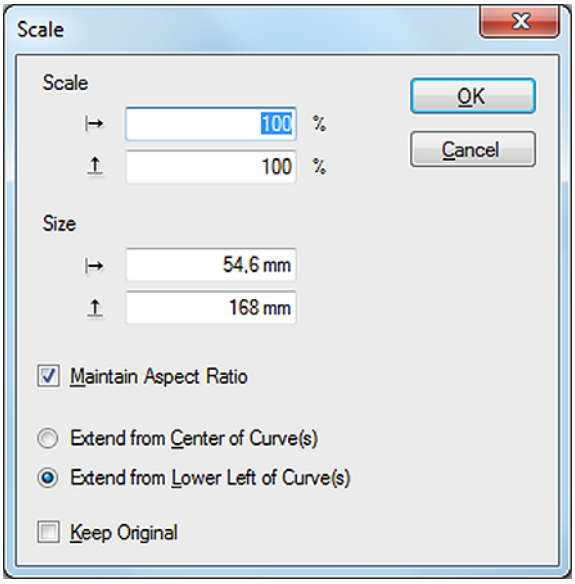
	Main Menu->Curves->Jog Curves...
	Alt + Left, **Alt + Right**, **Alt + Up**, **Alt + Down**

Use **Keyboard Arrows** to move the **Selected Curve(s)**:



10.2.4 Scale Curve

	Main Menu->Curves->Scale...
	Ctrl+T



Scale by **Factor** or **Size**:

Scale

Specify a scale factor to use when scaling the **Selected Curve(s)**.

Size

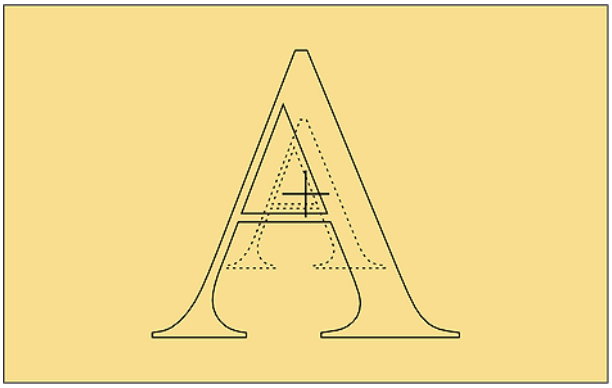
Specify the new, overall size for the **Selected Curve(s)**.

Maintain Aspect Ratio

When checked, the X/Y relationship of the original curves is kept.

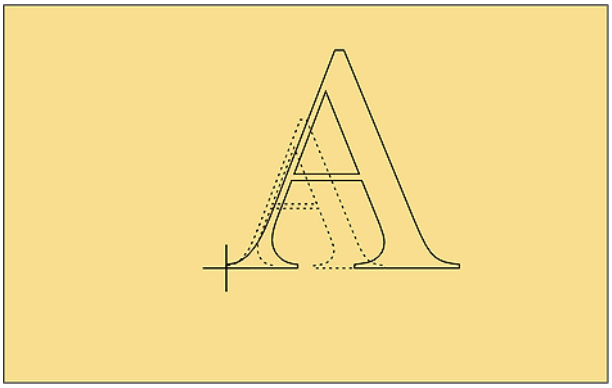
Extend from Center of Curve(s)

Scale is carried out relative to the center of the **Selected Curve(s)**:



Extend from Lower Left of Curve(s)

Scale is carried out relative to the lower left corner of the **Selected Curve(s)**:



Keep Original

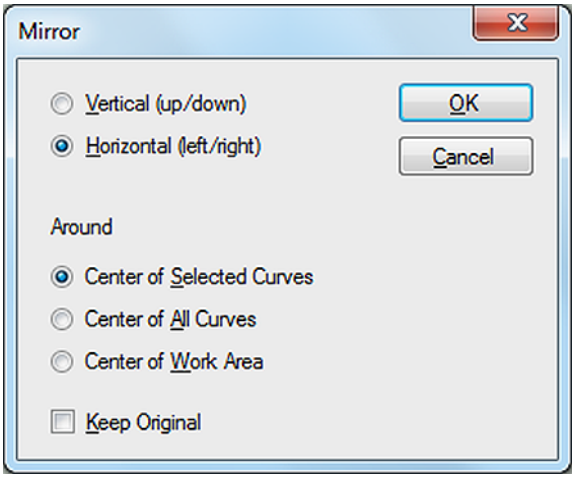
The original, **Selected Curve(s)** are kept unchanged.

A copy of the **Selected Curve(s)** is made, ready to be scaled.

10.2.5 Mirror Curve

Main Menu->Curves->Mirror...

	Ctrl+Shift+M



Mirrors/flips the **Selected Curve(s)** according to the selected options.

Curves may be mirrored **Vertically** or **Horizontally**.

Vertical (up/down)

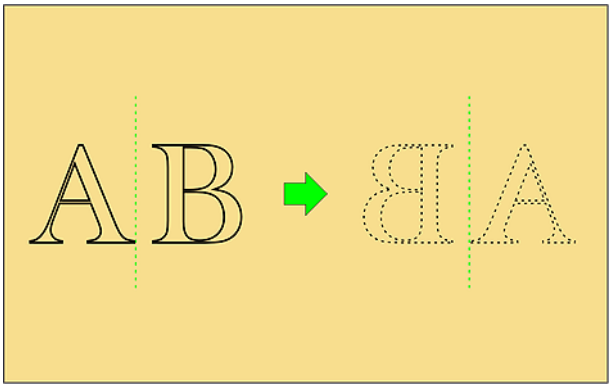
Specify vertical mirroring.

Horizontal (left/right)

Specify horizontal mirroring.

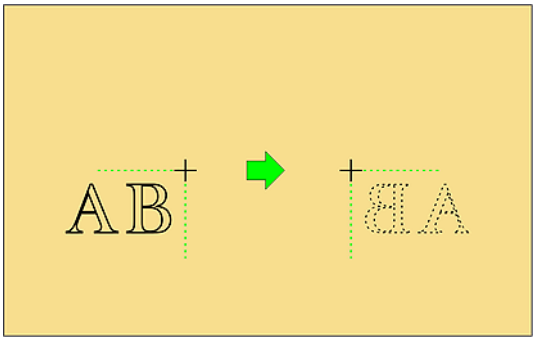
Center of Selected Curve(s)

Selected mirroring is carried out around the center of the **Selected Curve(s)**:



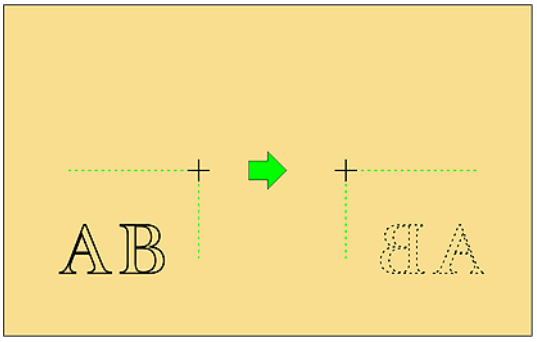
Center of All Curve(s)

Selected mirroring is carried out around the center of the **All Curve(s)**:



Center of Work Area

Selected mirroring is carried out around the center of actual **Work Area**:



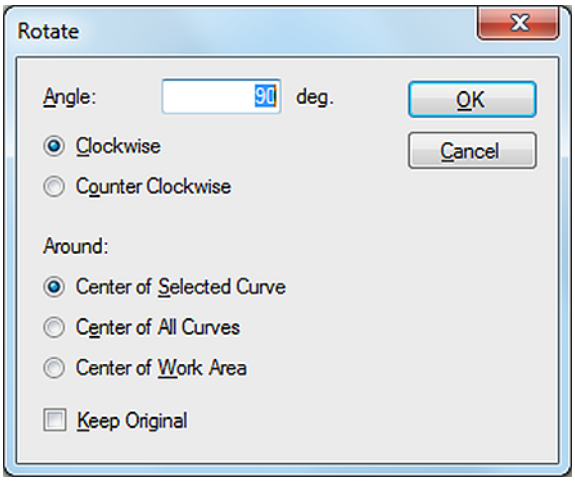
Keep Original

The original, **Selected Curve(s)** are kept unchanged.

A copy of the **Selected Curve(s)** is made, ready to be mirrored.

10.2.6 Rotate Curve

	Main Menu->**Curves**->**Rotate**...
	Ctrl+Shift+R



Note: Rotataing curves or the entire job will not change the flute/grain direction of the job.

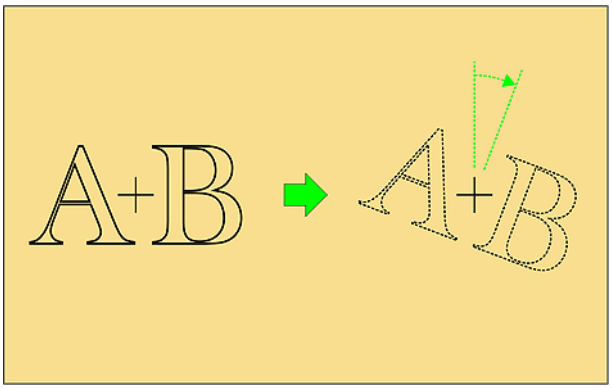
However, if you want to change the flute/grain direction, this can be done from **Main Menu**->**Job**->Rotate 90° CW or CCW.

Clockwise/Counter Clockwise

Specify rotation direction.

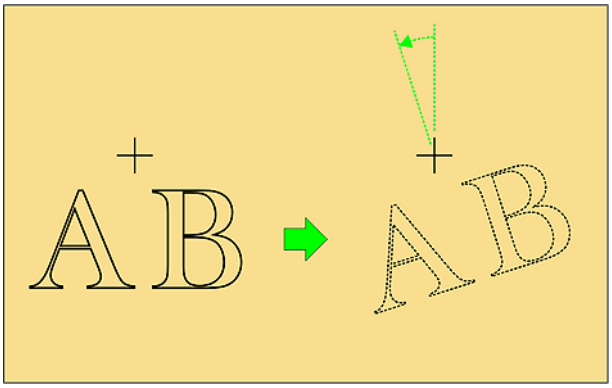
Center of Selected Curve(s)

Rotation is carried out around center of **Selected Curve(s)**:



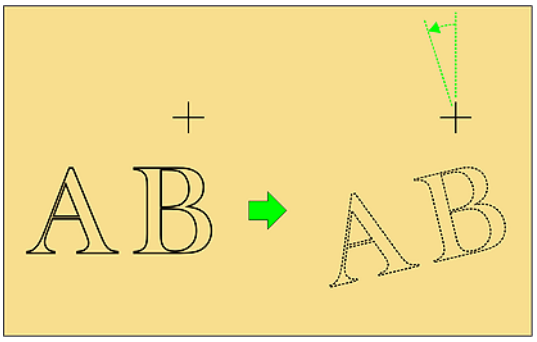
Center of All Curve(s)

Rotation is carried out around center of **All Curve(s)**:



Center of Work Area

Rotation is carried out around center of **Work Area**:

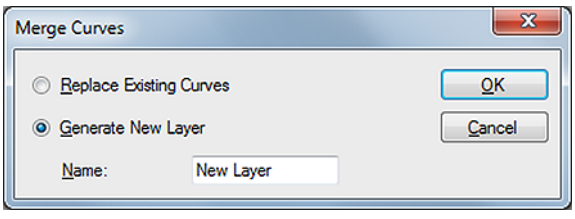


Keep Original

The original, **Selected Curve(s)** are kept unchanged. A copy of the **Selected Curve(s)** is made, ready to be rotated.

10.2.7 Merge Curves

Main Menu->Curves->Merge...

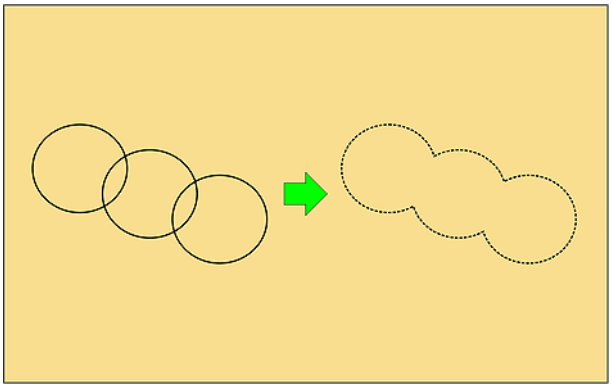


Multiple overlapping curves can be combined into a single continuous curve using the **Merge Curves** feature.

This can be useful in creating a single shape from multiple objects such as overlapping letter shapes.

Replace Existing Curves

The new curve(s) replaces existing curves:



Generate New Layer

The new curve(s) are placed in a new **Layer**.

Specify the **Name** of the new **Layer**.

10.2.8 Invert Curve Direction

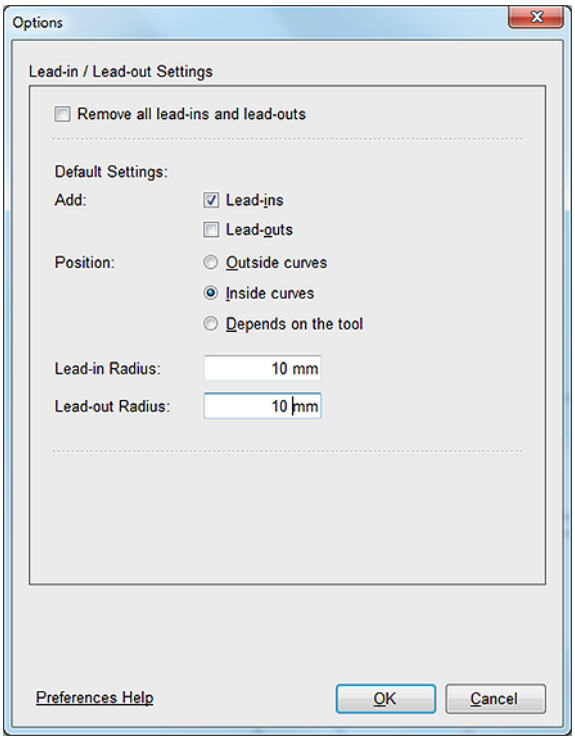
	Main Menu->Curves->Invert Curve Direction
	Ctrl+Shift+I

The execution direction for the **Selected Curve(s)** is inverted.

This function is useful in combination with other **Edit** features like **Split Curve** to optimize cutting directions.

10.2.9 Lead-in/Lead-out

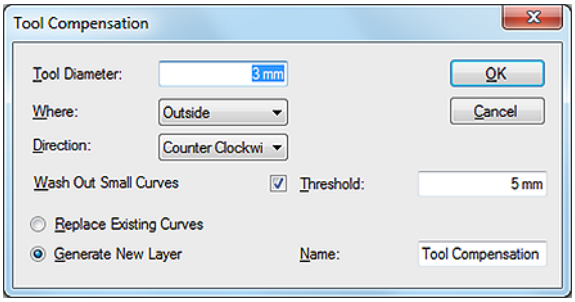
	Main Menu->Curves->Lead-in/Lead-out

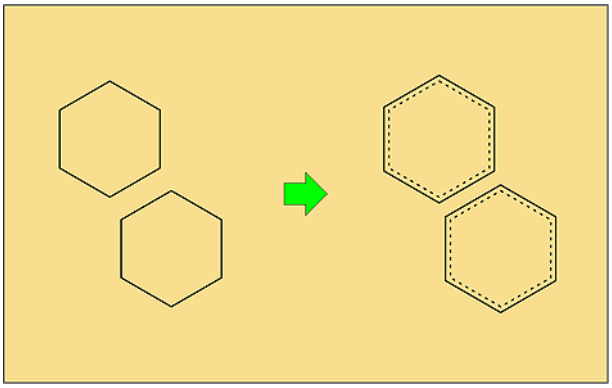


10.2.10 Tool Offset

Main Menu->Curves->Tool Offset...

Tool Offset





Tool Offset can be used to achieve correct size of the final product when milling.

Please note that normally, the compensation for milling bit diameter is done with the **Layer** parameters **Tool Offset** and **Tool Diameter**.

The main reason for using this **Edit** function is to keep the **Layer Offset** values for later use.

Can also be used for e.g. adding a **Cut Layer** with a certain offset outside a **Kiss Cut** layer.

Tool Diameter

Specify the diameter of the tool to use. The offset is set to half the diameter.

Where

Specify if the tool should be **Outside** or **Inside** the closed curve.

Wash Out. See below.

Wash Out Small Curves

Wash Out is a function to mill the entire area of a closed curve into chips. Useful as small pieces of waste may block the suction system..

Use this function to wash out all closed curves smaller than the **Treshold** value.

For more information, see below.

Direction

Specify the execution direction for the tool.

Replace Existing Curve(s)

The new curve(s) replaces existing curve(s):

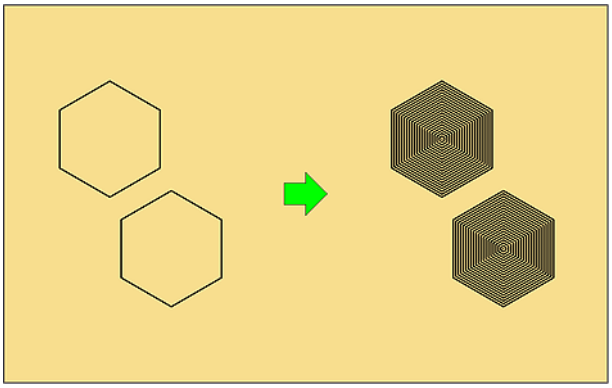
Generate New Layer

The new curve(s) are placed in a new **Layer**.

Specify the **Name** of the new **Layer**.

Wash Out

	Main Menu->Curves->Tool Offset->Where->Wash Out

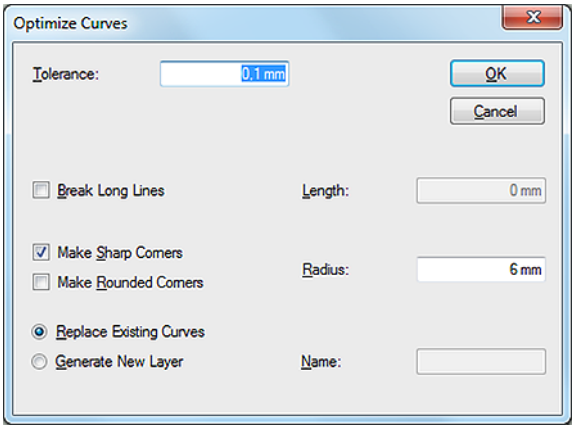


Wash Out is a function to mill the entire area of a closed curve.

Use this function to wash out the **Selected Curve**.

10.2.11 Optimize Shape

Main Menu->Curves->Optimize Shape...



Optimizing improves the cutting performance of curves by re-drawing them to a specified tolerance as lines and arcs.

Curves are automatically optimized when producing, but the **Optimize Curves** feature is available for optimization of curves before production occurs, and provides greater control over the optimization of your curves.

Tolerance

Curves are automatically optimized using the specified **Tolerance**.

A low value will maintain the quality of the input file.

A high value will increase performance, but the cutting quality might be reduced, depending upon the material used.

Break Long Lines

This function divides a (long) line into line segments with specified length.

One example:

You are about to cut a big rectangle in a flexible material, with a high demand for **Print to Cut** alignment.

By compensation to the corners of the rectangle only, the result is not optimal, despite a high number of **Registration Marks**.

Shorter lines allows for more accurate **Print to Cut** alignment.

Note: Break Long Lines can be applied for all jobs from **Main Menu**->**Edit**->**Options**->**Production**.

Make Sharp Corners

Rounded Corners with specified **Radius** are converted to **Sharp Corners**.

Make Rounded Corners

Sharp Corners are converted to **Rounded Corners** with specified **Radius**.

Replace Existing Curves

The new curve(s) replaces existing curves:

Generate New Layer

The new curve(s) are placed in a new **Layer**.

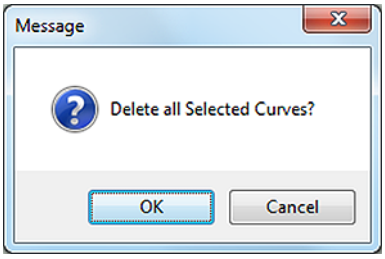
Specify the **Name** of the new **Layer**.

10.2.12 Remove Curves

	Main Menu->**Curves**->**Remove Curves**...
	Del

Remove **Selected Curve**.

Confirm to complete:



10.3 Curve Segment Modifications

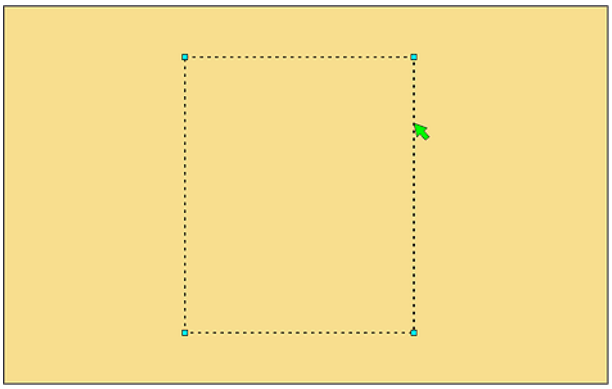
10.3.1 Select a Curve Segment

Enter Edit Point Mode

	Table View Toolbar->Edit Points
	Main Menu->Curves->Edit Point

Select Curve Segment

Select **Curve Segment** using the **Mouse Pointer**:



Edit Curve Segment Menu

While pointing at the **Curve Segment**, press the **Right Mouse Button**.

The **Edit Curve Segment Menu** appears:

- ***Add Corner***
- ***Add Arc***
- ***Add Bezier***
- ***Split Curve***
- ***Close Curve***
- ***Add Regmark***

10.3.2 Add Corner

	Selected Curve Segment->Right Mouse Button Menu->Add Corner

Add a **Corner Point** in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve**.

10.3.3 Add Arc

	Selected Curve Segment->Right Mouse Button Menu->Add Arc

Add an **Arc Point** in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve**.

10.3.4 Add Bezier

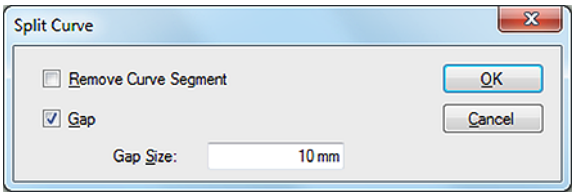
	Selected Curve Segment->Right Mouse Button Menu->Add Bezier

Add a **Bezier Point** in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve**.

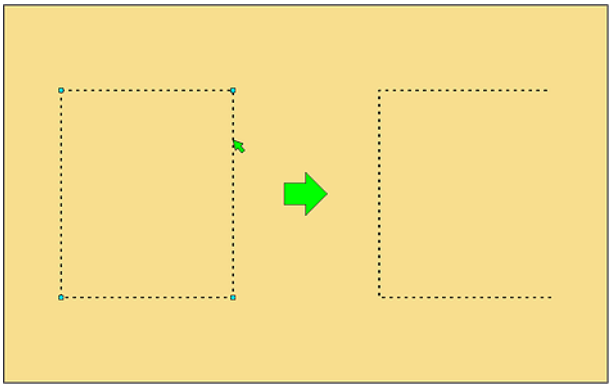
10.3.5 Split Curve

	Selected Curve Segment->Right Mouse Button Menu->Split Curve
	Selected Curve Point->Right Mouse Button Menu->Split Curve



Remove Curve Segment

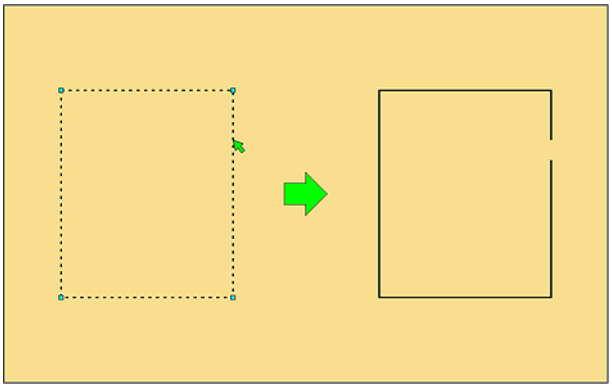
Remove the **Curve Segment** currently pointed at.



Gap

A **Gap** with length **Gap Size** is inserted in **Current Position**.

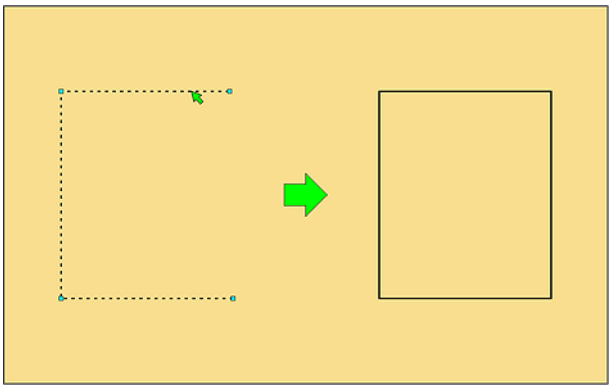
Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve.**



10.3.6 Close Curve

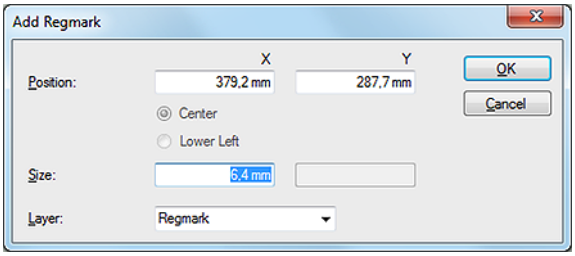
	Selected Curve Segment->Right Mouse Button Menu->Close Curve
	Selected Curve Point->Right Mouse Button Menu->Close Curve

The **Selected Open Curve** is closed.

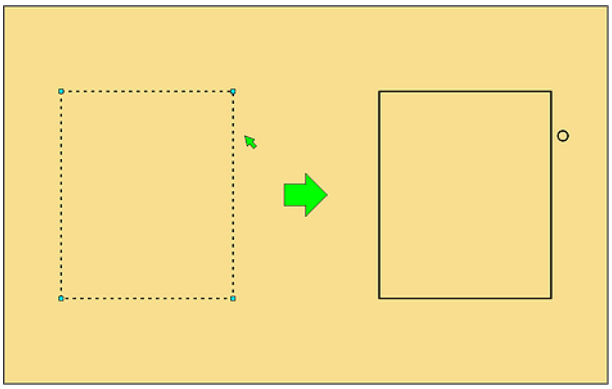


10.3.7 Add Regmark

	Selected Curve Segment->Right Mouse Button Menu->Add Regmark
	Selected Curve Point->Right Mouse Button Menu->Add Regmark
	Table View->Right Mouse Button Menu->Add Regmark



A new **Registration Mark** will be created in the **Mouse Pointer** position:



Position X and Y

Specify the coordinates for the new **Registration Mark**.

Entering values here will override the **Mouse Pointer** position.

Center / Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size of the new **Registration Mark**.

Layer

Specify the **Layer** for the new curve.

The **Regmark Layer** is default.

10.4 Curve Point Modifications

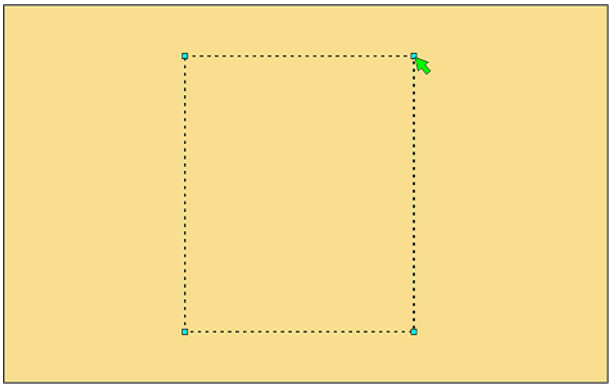
10.4.1 Select a Point

Enter Edit Point Mode

	Table View Toolbar->**Edit Points**
	Main Menu->**Curves**->**Edit Point**

Select Curve Point

Select **Curve Point** using the**Mouse Pointer**:



Edit Curve Segment Menu

While pointing at the **Curve Point**, press the **Right Mouse Button**.

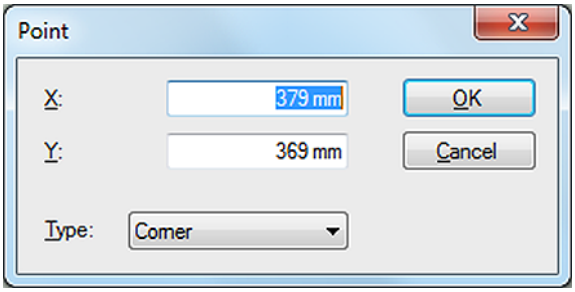
The **Edit Curve Point** menu appears:

- ***Edit Point***

- ***Remove Point***
- ***Smooth***
- ***Add Regmark***
- ***Use as Start Point***
- ***Add Lead-in/Lead-out***
- ***Split Curve***
- ***Close Curve***

10.4.2 Edit Point

Selected Point->Right Mouse Button Menu->Edit Point



Move **Selected Point** to a new position.

X/Y
Specify the coordinates for the new position.

Type
Specify the corner type:

- **Corner**
- **Arc** - the new point is a point on an arc
- **Bezier** - the new point is a point on a Bezier curve
- **True Type**
- **Bow**
- **Tangent**

10.4.3 Remove Point

Selected Point->Right Mouse Button Menu->Remove Point

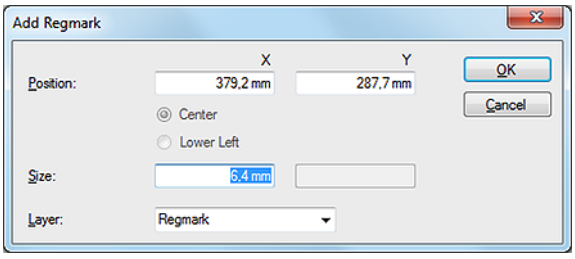
The **Selected Point** is deleted.

10.4.4 Smooth

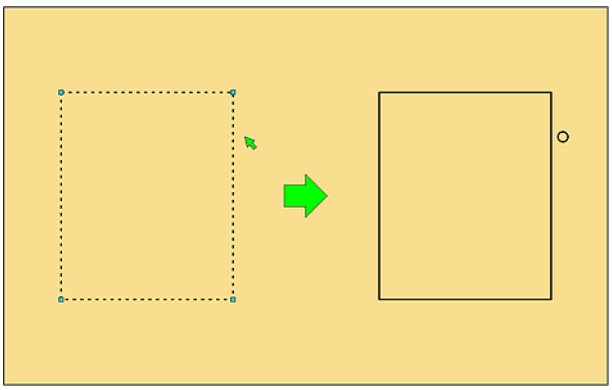
	Selected Point->Right Mouse Button Menu->Smooth

10.4.5 Add Regmark

	Selected Curve Segment->Right Mouse Button Menu->Add Regmark
	Selected Curve Point->Right Mouse Button Menu->Add Regmark
	Table View->Right Mouse Button Menu->Add Regmark



A new **Registration Mark** will be created in the **Mouse Pointer** position:



Position X and Y

Specify the coordinates for the new **Registration Mark**.

Entering values here will override the **Mouse Pointer** position.

Center / Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size of the new **Registration Mark**.

Layer

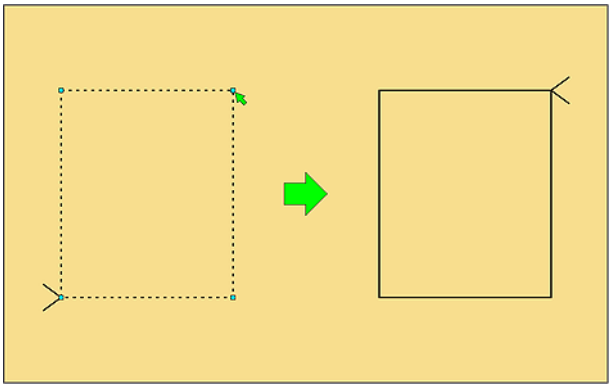
Specify the **Layer** for the new curve.

The **Regmark Layer** is default.

10.4.6 Use as Start Point

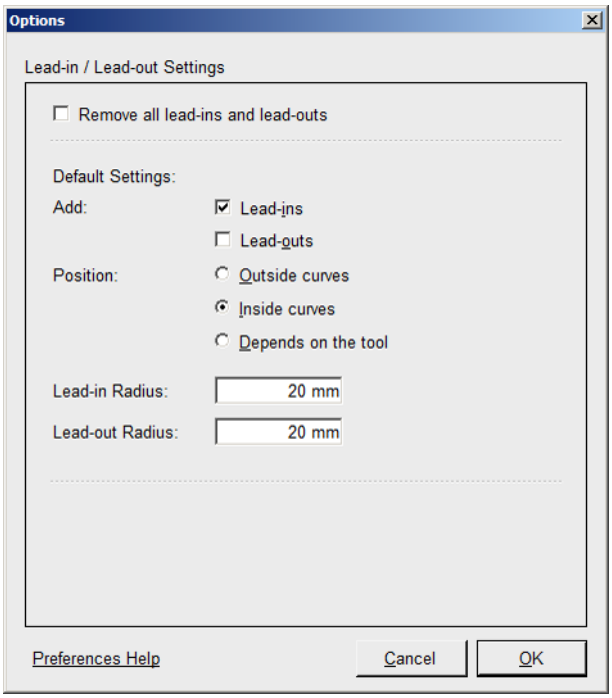
Selected Point->Right Mouse Button Menu->Use as Start Point

The **Selected Point** is used as **Start Point**:



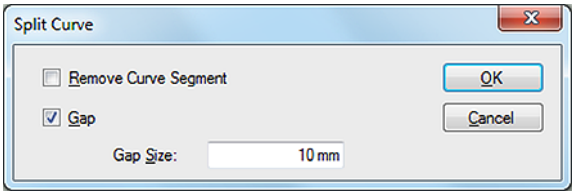
10.4.7 Add Lead-in/Lead-out

Selected Point->Right Mouse Button Menu->Add Lead-in/Lead-out



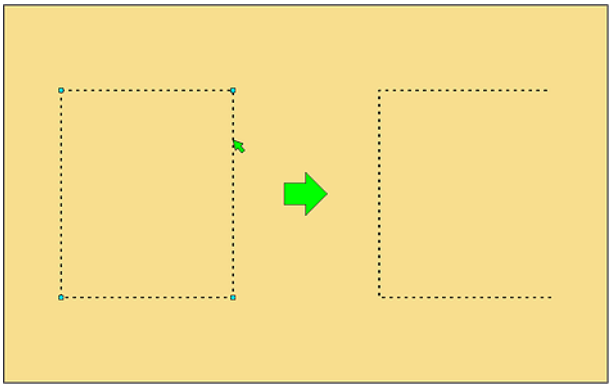
10.4.8 Split Curve

	Selected Curve Segment->Right Mouse Button Menu->Split Curve
	Selected Curve Point->Right Mouse Button Menu->Split Curve



Remove Curve Segment

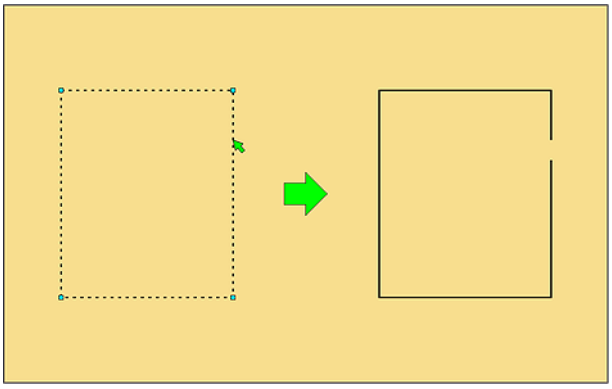
Remove the **Curve Segment** currently pointed at.



Gap

A **Gap** with length **Gap Size** is inserted in **Current Position**.

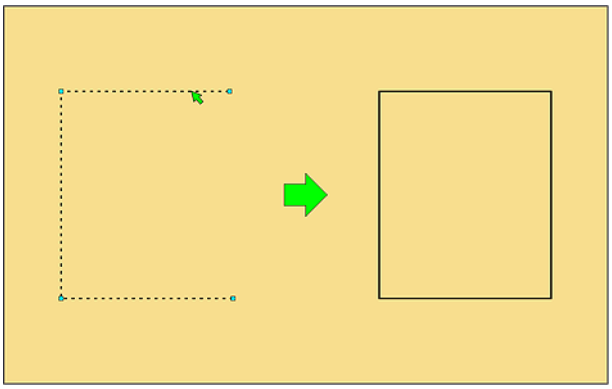
Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve.**



10.4.9 Close Curve

	Selected Curve Segment->Right Mouse Button Menu->Close Curve
	Selected Curve Point->Right Mouse Button Menu->Close Curve

The **Selected Open Curve** is closed.



10.5 Add new Geometry

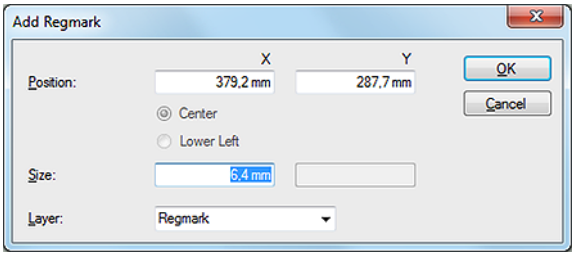
	Table View->Right Mouse Button Menu

The following menu items are available:

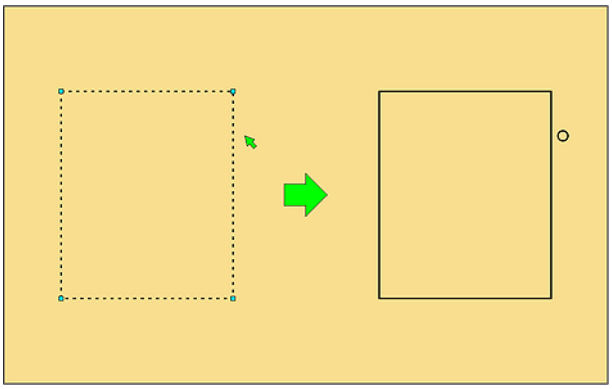
- ***Add Regmark***
- ***Add Square***
- ***Add Circle***
- ***Add Ellipse***
- ***Add Rectangle***

10.5.1 Add Regmark

	Selected Curve Segment->Right Mouse Button Menu->Add Regmark
	Selected Curve Point->Right Mouse Button Menu->Add Regmark
	Table View->Right Mouse Button Menu->Add Regmark



A new **Registration Mark** will be created in the **Mouse Pointer** position:



Position X and Y

Specify the coordinates for the new **Registration Mark**.

Entering values here will override the **Mouse Pointer** position.

Center / Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size of the new **Registration Mark**.

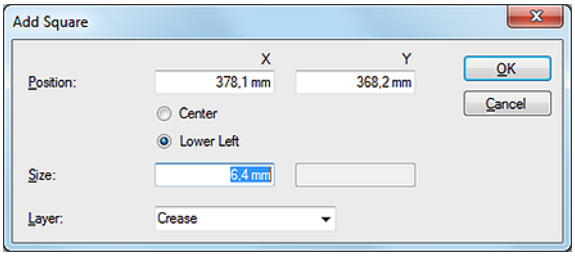
Layer

Specify the **Layer** for the new curve.

The **Regmark Layer** is default.

10.5.2 Add Square

Table View->Right Mouse Button Menu->Add Square



Add a **Square** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Square**.

Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the **Center** or the **Lower Left Corner** of the**Job**.

Size

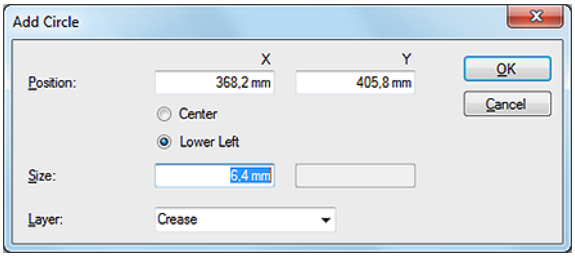
Specify the size of the **Square**.

Layer

Specify the **Layer** for the new curve.

10.5.3 Add Circle

Table View->Right Mouse Button Menu->Add Circle



Add a **Circle** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Circle**.

Entering values here will override the **Mouse Pointer** position.

Center / Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

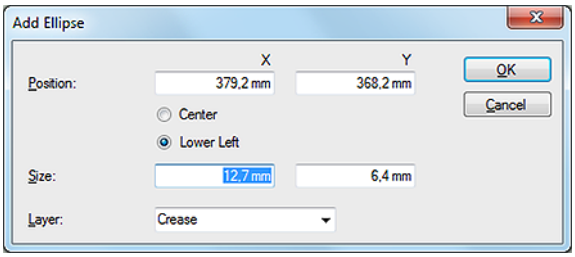
Specify the size (diameter) of the new **Circle**.

Layer

Specify the **Layer** for the new curve.

10.5.4 Add Ellipse

Table View->Right Mouse Button Menu->Add Ellipse



Add an **Ellipse** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Ellipse**.

Entering values here will override the **Mouse Pointer** position.

Center / Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

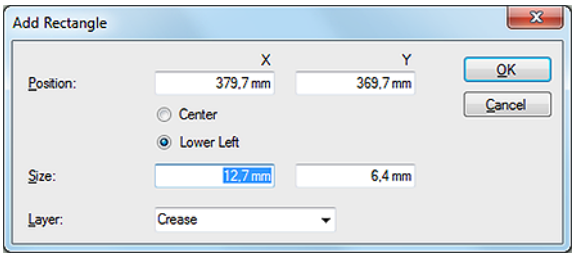
Specify the size (X/Y) of the new **Ellipse**.

Layer

Specify the **Layer** for the new curve.

10.5.5 Add Rectangle

Table View->Right Mouse Button Menu->Add Rectangle



Add a **Rectangle** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Rectangle**.

Entering values here will override the **Mouse Pointer** position.

Center / Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size (X/Y) of the new **Rectangle**.

Layer

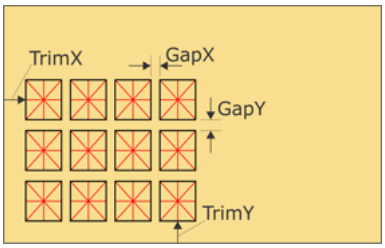
Specify the **Layer** for the new curve.

11. Job Alternatives, Advanced

11.1 Step and Repeat

	Selected Job->Production Setup->Step and Repeat

Use **Step and Repeat** when you want more than one copy of **Selected Job**:



For more information, go *here*.

11.2 Add Nested Layout

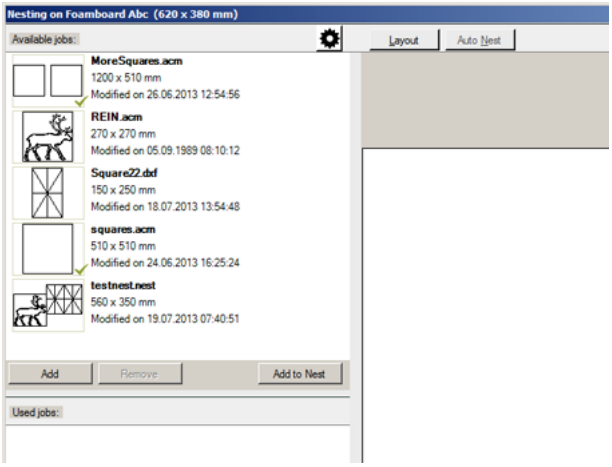
	Main Toolbar->File->Add Nested Layout...
	My Jobs Toolbar->Add Nested Layout...

Use **Add Nested Layout** when you want to merge different designs together and treat these as one job.

Normally, this function is relevant for non-printed material only.

Note: This function is not fully implemented yet.

A separate **Nesting Window** appears, where all **Nesting** functions are maintained:



Available Jobs

This is **My Jobs List** as you know it from before, with the possibility to **Add**, **Remove** and **Sort** files in the list.

Used Jobs

This is a list of **Files** selected for **Nesting** , and the number of **Copies** currently specified.

Use the **+** and **-** buttons to modify number of copies.

Layout

Configure Layout.

Auto Nest

Not Implemented Yet.

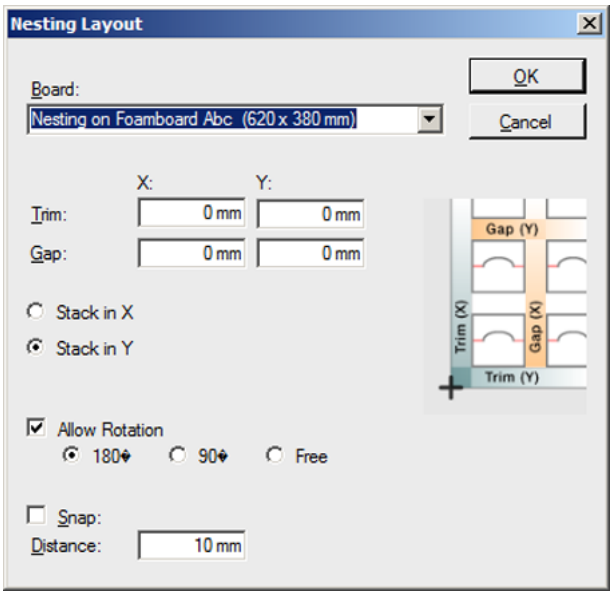
Add to Nest

Add **Selected File** to **Nested Layout**.

For more information, go *here*.

11.2.1 Configure Layout

Nesting Window->Layout



From this dialog, configure the overall rules for this **Nested Layout**.

When creating a new **Nested Layout**, this dialog is the start point.

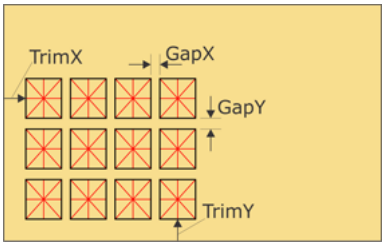
Board

From the drop down list, select actual **Board**

This function is not implemented yet.

Trim and Gap

Specify the **Trim** and **Gap** values:



Stack in X/Y

Specify if the **Nested Layout** should start placing jobs along X or Y.

Allow Rotation

Specify if **Rotation** is allowed.

180 - the only **Rotation Angle** allowed.

90 - the only **Rotation Angle** allowed.

Free - You can specify **Rotation Angle** to use.

Snap

Specify a **Snap Distance**.

If two jobs are moved closer to each other than the **Snap Distance**, they will be moved together to use one common line.

11.2.2 Create Nested Layout

➡	Double-click a file in the **Available Jobs List**.
➡	**Nesting Window->Add To Nest**

Start creating a new **Nested Layout** by adding files to the **Layout** using the above commands.

When files are loaded and placed as wanted, press **OK** to save the **Nested Layout**.

The **Nested Layout** can be re-opened for later edit.

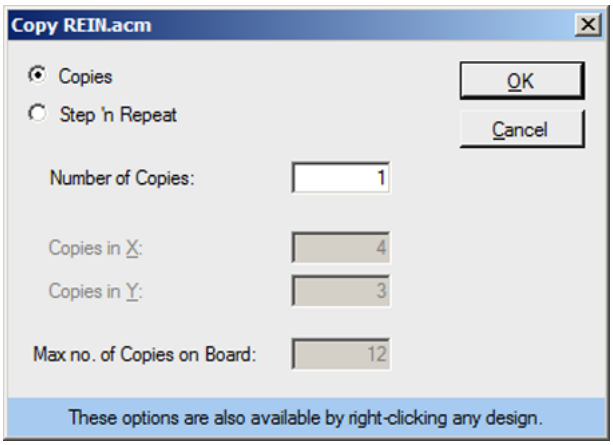
The new **Nested Layout** will be added to **My Jobs List**, ready to be handled in the same way as any other file.

That means you can add **Nested Layouts** into new **Nested Layouts**.

By the above commands, the **Copy** dialog is invoked.

Layout is available in two ways, by **Copies** or **Step and Repeat**:

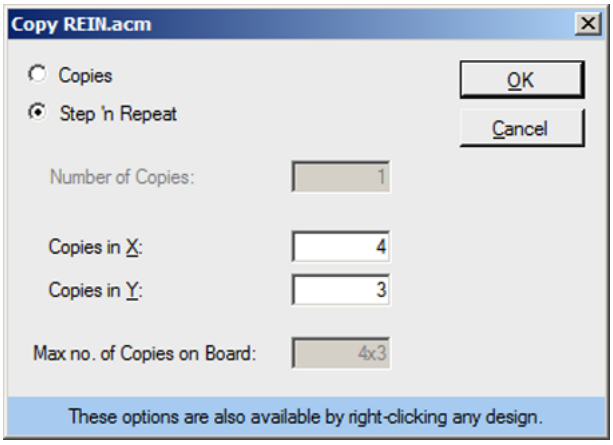
Copies



Specify **Number of Copies**.

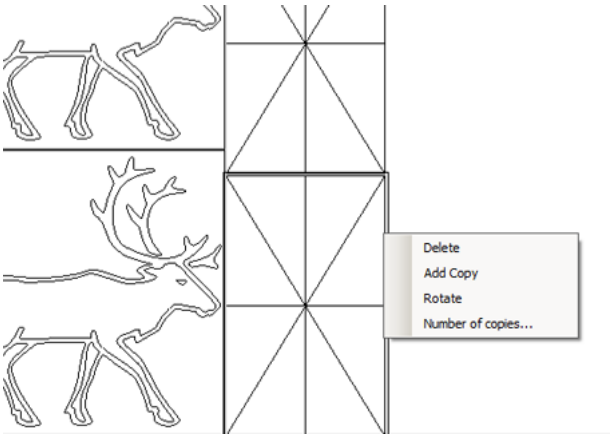
The copies are distributed according to the rules in **Layout Configuration**.

Step and Repeat



Specify how many **Copies** you want along **X** and **Y**.

11.2.3 Edit Nested Layout



Select a Copy for Edit

Use the **Mouse Pointer** to select a copy for edit.

The **Selected Copy** is surrounded by a frame.

Edit a Selected Copy

Move

With the **Mouse Pointer**, point inside the **Selected Copy**.

Keep left **Mouse Button** down and move the **Selected Copy** to wanted position.

Release the button.

Delete

Right-click inside the **Selected Copy**.

From the menu, select **Delete**.

Add Copy
Right-click inside the **Selected Copy**.
From the menu, select **Add Copy**.

Number of Copies...
Right-click inside the **Selected Copy**.
From the menu, select **Number of Copies...**.
The **Copy** dialog is opened.

11.3 Jobs Longer than Table

If your cutting device is equipped with an automated conveying system, you may be able produce jobs that are larger than your cutting table.

iPC supports production of jobs longer than the table by dividing the job into multiple sections and producing those sections automatically.

This function is enabled, ready to execute as soon as a job longer than the table is processed.

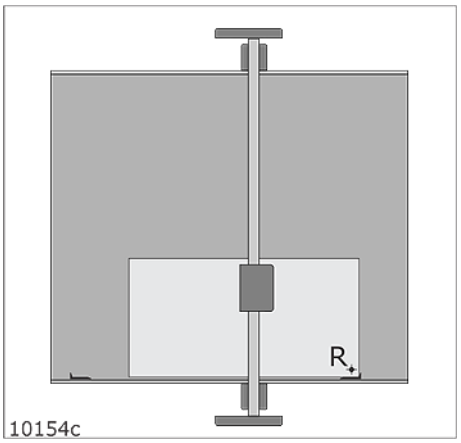
11.4 Jobs with **Bar Codes**

Not implemented yet.

11.5 Job including Reverse Operation

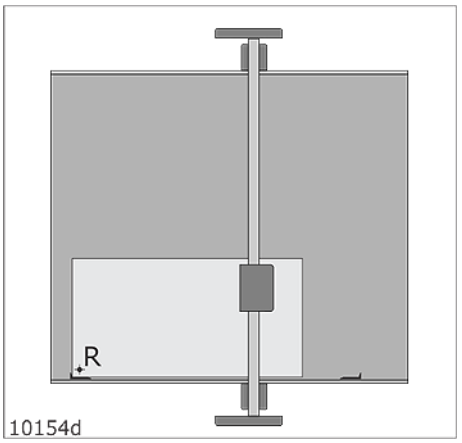
Main Menu->Advanced->Configure Tools

Workflow



Step 1 - the sheet is aligned towards the **right ruler**.

Reverse Operations are completed.



Step 2 - the sheet is aligned towards the **left ruler**.

The rest of the job is completed.

A typical use of **Reverse Operation** is when you want to add a **crease** line on the front side of a material that you normally prepare from the rear side.

This function requires that the table is equipped with **left and right rulers**.

Note: **Reverse Operation** is not available on machines with conveyor belt.

11.6 Stop at Tool Select

	Main Menu->Advanced->Configure Tools

Use this function to stop execution before the actual **Layer** is executed.

One example of use is if you want to change a milling bit in the middle of a job.

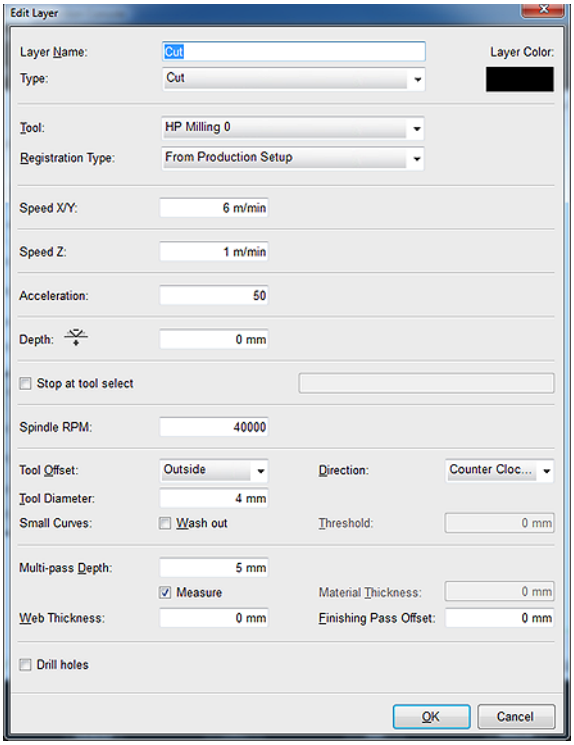
For more information, go ***here.***

11.7 Milling functions

	Selected Job->Layers->Edit Layer
	Main Menu->Layer->Edit Layer

General

All settings are maintained from **Edit Layer** dialog.



Layer Type

Layer type **Cut** is used for milling.

Tool

Select the **Milling Tool** available.

Stop at Tool Select

Stop at Tool Select will make the machine stop before the execution of the actual **Layer** is started.

The text entered in the **Stop at Tool Select** field will be displayed.

Use this function in jobs with multiple milling operations requiring different milling bits.

Use the text field to describe the new milling bit to be entered.

Spindle RPM

Specify RPM.

Tool Offset

Specify if the router bit should be inside or outside the closed curve, or in the center of the line.

For closed curves, we also have the **Wash Out** function available.

Direction

Specify the milling direction around a closed curve.

This setting has huge impact on the finished product quality.

Note: This function will override the original direction of the curve.

Tool diameter

Specify the router bit diameter.

All closed curves will be offset half the value, outside or inside, dependant upon **Tool Offset** selection.

Wash Out Small Curves

Use this function to wash out all closed curves smaller than the **Treshold value**.

Multi-pass depth

Specify the maximum depth to be milled in each pass.

Recommendation: This value should be limited to 1 - 1.5 times the **Router bit** diameter.

Measure / Material Thickness

Specify if the material thickness should be taken from the material thickness measurement performed at the beginning of the job.

If not, specify the thickness.

Material thickness is used when calculating the depth of each pass.

Web Thickness

When producing a job with multiple passes, specifying a **Web Thickness** offsets the depths of all passes so that only a thin amount of material is left for an additional final pass.

The vacuum hold-down strength of all cutting devices have limitations, and small parts may shift on the cutting surface when they are routed.

The result is an undesired cut on the edge of the part where the router bit made contact during the shift.

This effect is eliminated or greatly reduced using **Web Thickness**.

When the **router bit** has less material to cut on the final pass, there is less chance of the part moving when the cut is completed because there is less force applied to the part by the **router bit**.

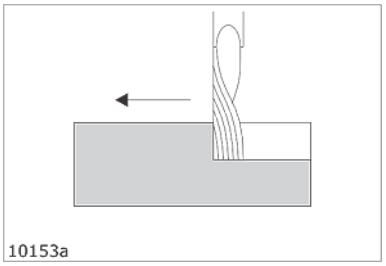
Finishing Pass offset

Spesify the offset to be used for the last finishing pass.

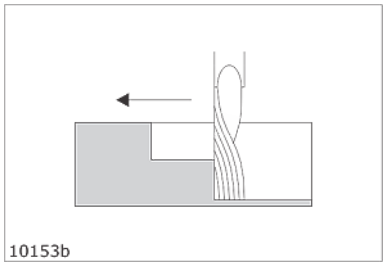
Drill holes

Select this option to drill holes.

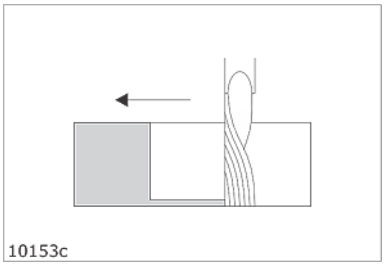
Multi pass milling



1. pass



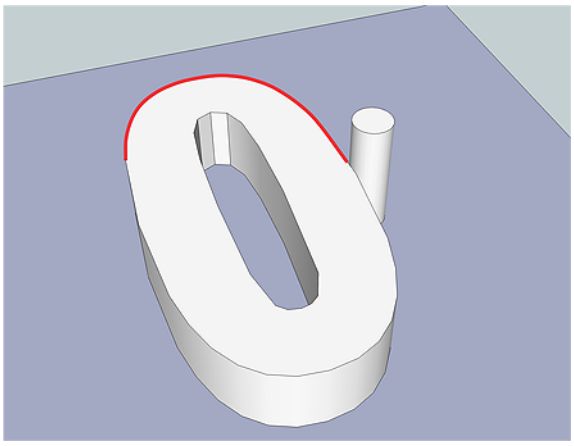
2. pass



3. pass - mill through and clean the path (**Web Thickness**).

Multi Pass Milling is required if you want to mill through a material where the thickness is bigger than 1 - 1.5 times the **Router bit** diameter.

Finishing Pass Milling



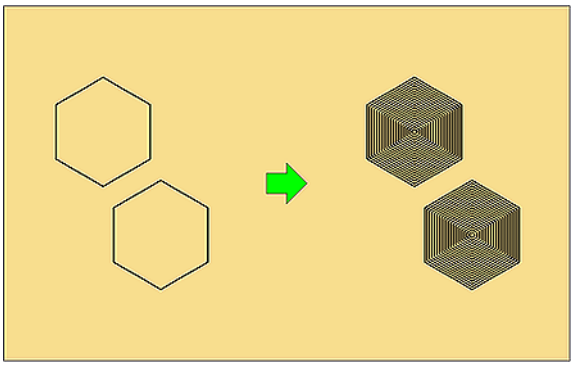
A **Finishing Pass** is the last pass of a multi-pass production.

This pass is slightly offset, or contracted, from the other passes.

The result is a final pass that shaves the entire edge of the part; removing any evidence of the multi-pass production and producing a smooth edge.

iPC will automatically increase the **Tool Offset** to compensate for the Finishing Pass and produce the curves at the intended size.

Wash Out

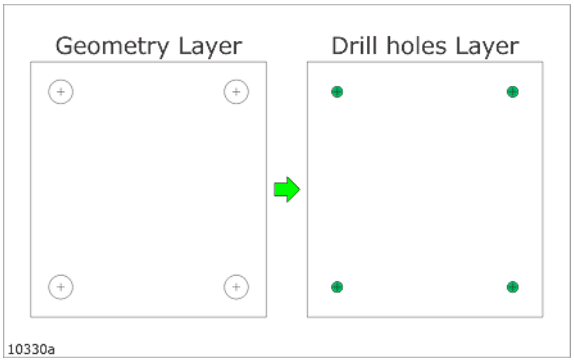


Use **Layer Type**: **Wash Out**

Wash Out is a function to mill the entire area of a closed curve.

Use this function to wash out the closed curves in the **Layer**.

Drill holes



Use **Layer Type**: **Drill**

When you specify that a **Layer** should drill holes, holes will be drilled in the center of closed curves.

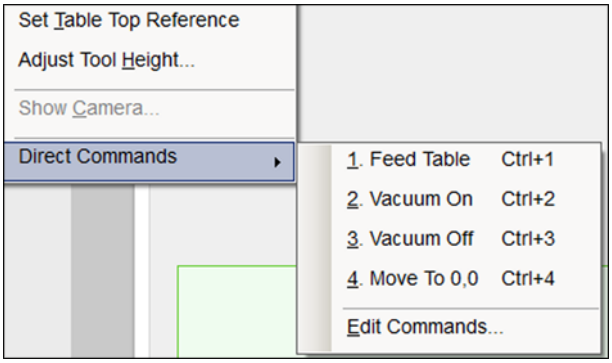
A typical example is shown at left.

Geometry (circles) will be converted into holes and drilled.

12. Direct Commands

Direct Commands Menu

Main Menu->Machine->Direct Commands

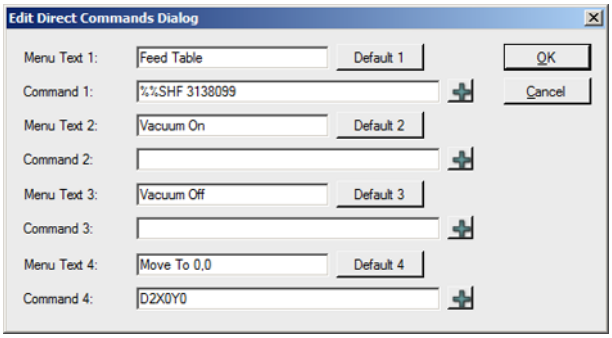


Use this menu to select functions for immediate execution on the **Cutting Table**.

Each menu item is configurable, using the **Edit Commands...** function:

Edit Commands...

Main Menu->Machine->Direct Commands->Edit Commands.....



Menu Text 1

Specify the text that describes **Command 1**.

This text will be displayed in the **Direct Commands Menu**, **Line 1**.

Command 1

Specify the command to be executed when **Line 1 (Ctrl+1)** is selected in the **Direct Commands Menu**.

For a list of available commands, *see Appendix*.

You can edit the command directly or add a command using the + function.

Menu Text 2-4, Commands 2-4

Description similar to **Menu Text 1** and **Command 1**.

For further information, see ***Table Preset***.

13. Backup/Restore

After your system has been fully configured, you should back it up using the **Backup and Restore** system.

Performing a backup will save all of iPC's essential parameters into a number of files.

If your system stops performing properly or you accidentally alter your configuration, you can easily restore all settings to their exact state as when the backup was performed. Backups may be performed either manually or automatically.

Please note:

- iPC backup stores all iPC configuration settings to a number of files on the file system.
- Backup of the file system is the responsibility of the customer.

For information about how to configure an automatic backup sequence, see ***Backup, schedule***.

13.1 Backup System Parameters

Manual Backup of System Parameters

Main Menu->Advanced->Backup Configuration...

Each time **Manual Backup** is invoked, you enter a **File Save** dialog.

Specify a proper file name and click **Save**.

Use this function to backup your system both before and after performing upgrades.

13.2 Restore System Parameters

Restore System Parameters

Main Menu->Advanced->Restore Configuration...

Each time **Restore** is invoked, you enter a **File Open** dialog.

Select the file you would like to restore and click **Open**.

We strongly recommend you always backup your system manually before performing a restore.

13.3 Backup Cutting Key

Main Menu->Advanced->Cutting Keys->Backup...

Use this function to complete a manual backup of the complete set of **Cutting Keys**.

You are asked for a destination folder and file name.

Scheduled backups will follow the selected sequence, independent from any manual backup.

13.4 Restore Cutting Key

Main Menu->Advanced->Cutting Keys->Restore.....

Use this function to restore the complete set of **Cutting Keys**.

For more information, see *Import Cutting Keys*.

14. iPC Configurations

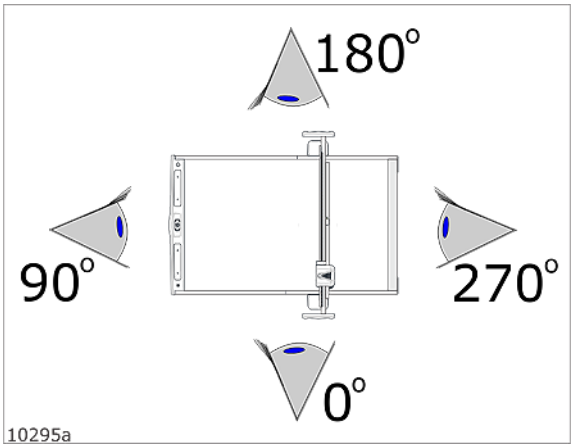
The **iPC Configuration** setting is a set of options specifying the general behaviour of the system.

After first installation, you should go through each option in order to ensure proper setting.

14.1 Table View Orientation

Main Menu->View->Table View Orientation

Select viewpoint for **Table View**.



Alternatives:

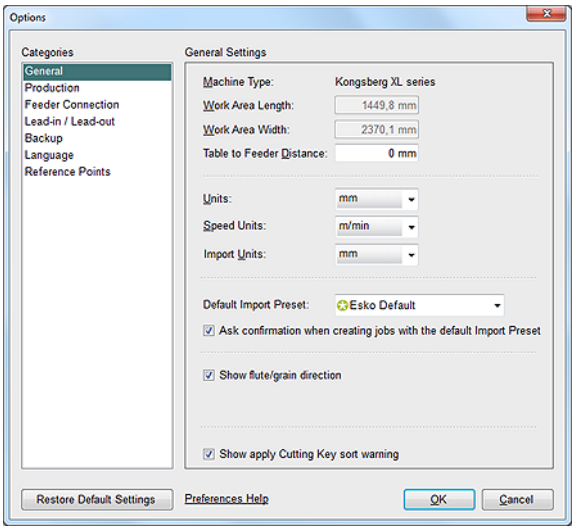
- 0°
- 90°
- 180°
- 270°

Viewpoint and **Operator Panel** position should be co-ordinated, in order to get correct jog direction.

For more information, see *Hardware Configuration*.

14.2 General

Main Menu->Edit->Options...->General



Machine Type

The **Machine Type** connected is displayed.

Work Area Length:

The measured **length** of the **Work Area**.

Work Area Width:

The measured **width** of the **Work Area**.

Table to Feeder Distance

HW

This value, which is relevant only if a **Sheet Feeder** is connected, affects the **Feed to front of table** option in the Production Manager.

The sum of the **Table to Feeder Distance** and Width parameter defines the feed length required to feed a sheet of material to the front of your device's work area.

Units

Select **Units** to be used in the **User Interface** (mm or inch).

Speed Units

Select **Units** to be used for speed in the **User Interface** (m/min or ips).

Import Units

Select **Units** to be used for **File Import**.

Units specified in the **Input File** will override this setting for that particular file.

Default Import Preset

Select Default **Import Preset** to be used for **File Import**.

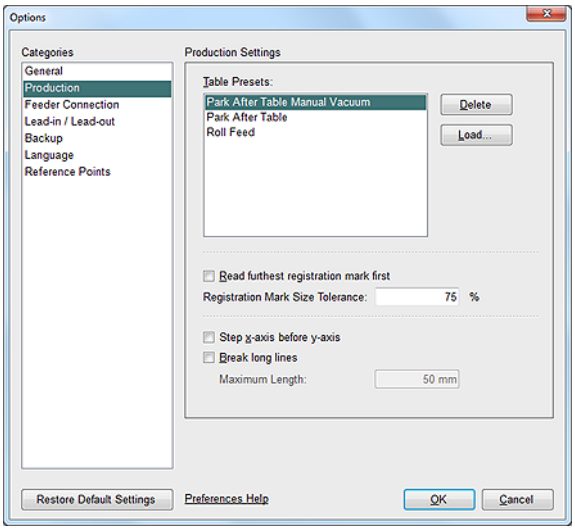
Ask for confirmation when creating jobs with the Default Import Preset

When enabled, you will be asked for confirmation each time a file is imported using the **Default Import Preset**.

Use this function to avoid unintended use of the **Default Import Preset**.

14.3 Production

Main Menu->Edit->Options...->Production



14.3.1 Table Presets

General

Table Preset is a set of commands that is sent to the **Cutting Table** each time a **Job** is executed.

You select the **Table Preset** to use from the ***Production Setup->Material Handling*** dialog.

By default, several **Table Presets** that are suitable for most production scenarios are installed.

More factory made **Table Presets** are available in the folder

My Documents->i-cut Production Console->Production Options.

If needed, add these to existing presets using the **Load** function.

Note: Only **Table Presets** configured for current **Machine Configuration** can be installed.

Use these functions to maintain **Table Presets**:

Delete
Delete selected **Table Preset**.

Load...
Load **Table Preset** from file.

14.3.2 Read Furthest Registration Mark first

HW

Define Registration Mark read sequence:

Un-checked
Normal sequence.

Checked
The sequence is:

1. Read the **Registration Mark** in the furthest X-position.
2. Read the rest of the **Registration Marks** using the normal sequence.

This function helps iPC calculate placement and rotation of curves on large sheets, but it will increase the execution time.

14.3.3 Step X-axis before Y-axis

Define Step and Repeat priority:

Un-checked
The entire column (Y) will be executed first before moving to next column.

Checked
The entire row (X) will be executed first before moving to next row.

14.3.4 Break Long Lines

This function divides a (long) line into line segments with specified length.

By this, optimization is improved.

One example:

You are about to cut a big rectangle in a flexible material, with a high demand for **Print to Cut** alignment.

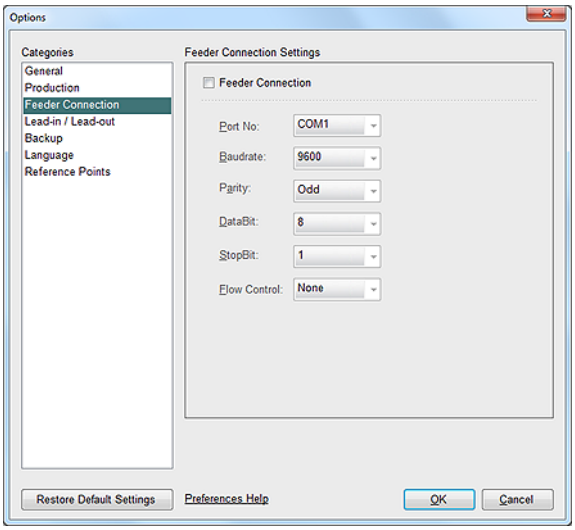
By compensation to the corners of the rectangle only, the result is not optimal, despite a high number of **Registration Marks**.

Shorter lines allows for more accurate **Print to Cut** alignment.

14.4 Feeder Connection

Main Menu->Edit->Options...->Feeder Connection

HW



iPC may communicate with a **Sheet Feeder** through a serial line.

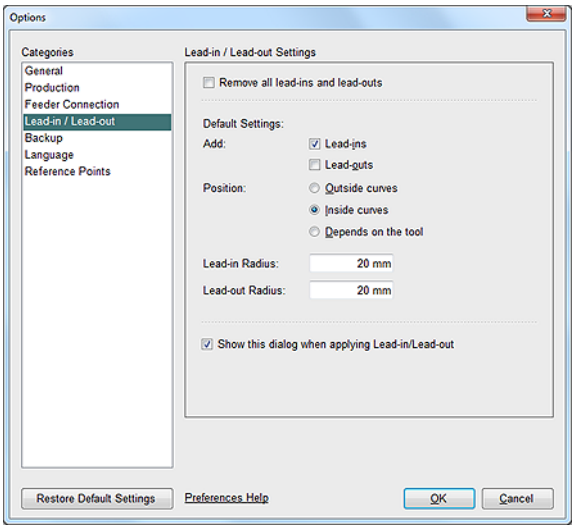
If necessary, provide relevant parameters.

To establish communication between iPC and your feeder, follow these instructions:

1. Connect the feeder to your computer using an available serial COM port, or USB-to-Serial adapter
2. From your **Windows Device Manager**, locate the COM port settings of the port to which the sheet feeder is connected.
3. Change the settings to: COM Port Number: As found in (2), Bits per second: 9600, Data bits: 8, Parity: Odd, StopBits: 1, Flow control: None
4. In the **Feeder Connection** dialog, adjust the parameters to match the corresponding values in your Device Manager.
5. Enable iPC communication on your sheet feeder's touch screen interface.
6. Open your iPC Configuration window and verify that the Feeder option is presently available. If it is not, contact your iPC dealer to request a license upgrade.

14.5 Lead-in/Lead-out

Main Menu->Edit->Options...->Lead-in/Lead-out



The **Lead-in/Lead-out** feature is primarily used for routing.

Adding **Lead-in/Lead-out** to a curve opens and extends the curve dynamically at production time so that cutting begins and ends inside or outside the path.

This is important for routing because the initial plunge into, and final lift out of the material may produce cutting results which are inconsistent with the rest of the part.

For information about how to apply **Lead-in** and/or **Lead-out**, see:

1. ***Curve modifications***.
2. ***Curve Point modifications***.

In the **Lead-in/Lead-out** option dialog described here, specify default values to use when **Lead-in** and/or **Lead-out** is applied.

The following parameters are available:

Outside

Lead-ins and **Lead-outs** are added to the outside of the curve(s) to which they are applied.

Inside

Lead-ins and **Lead-outs** are added to the inside of the curve(s) to which they are applied.

Depend on Tool

Both the inside or outside position and the radius of the **Lead-ins** and **Lead-outs** depends upon the tool parameters in the Edit Layer dialog for the layer(s) on which the intended curves reside.

Lead-in/Lead-out

Select whether **Lead-ins** and/or **Lead-outs** will be applied.

Radius

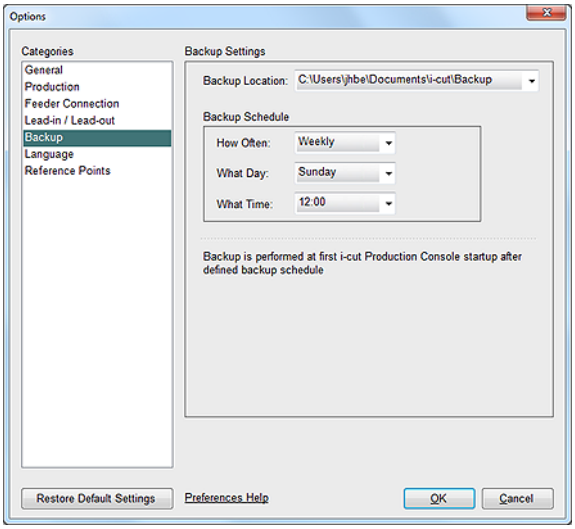
The **Lead-ins** and **Lead-outs** are always generated as absolute arcs, with the Radius defining the size. The Radius should be large enough to account for the diameter of the router bit or laser beam.

Show this dialog when applying Lead-in/Lead-out

When enabled, this dialog is displayed when the **Lead-ins** and **Lead-outs** are applied from the **Edit Curve** and **Edit Curve Point** dialogs.

14.6 Backup

Main Menu->Edit->Options...->Schedule Backup



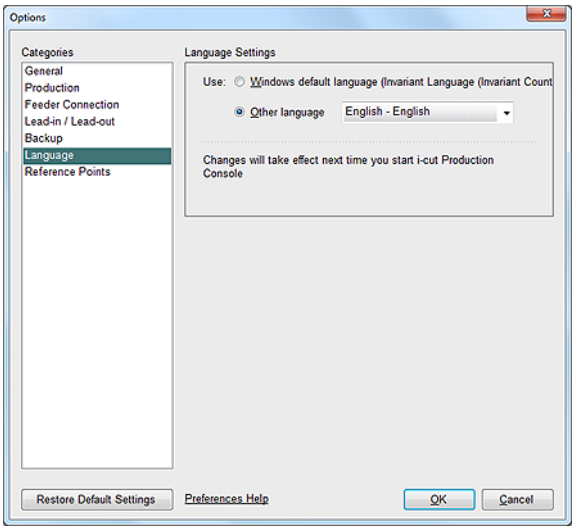
Use this dialog to configure the automatic **Backup Sequence**.

For **System Backup**, choose automatic backups to occur **Daily**, **Weekly** or **Monthly**.

For more information, see ***Backup/Restore***.

14.7 Language

Main Menu->Edit->Options...->Language



Windows Default Language

The language displayed in the **User Interface** defaults to the **Windows Operating System** language.

Enforce Language

Select this option if:

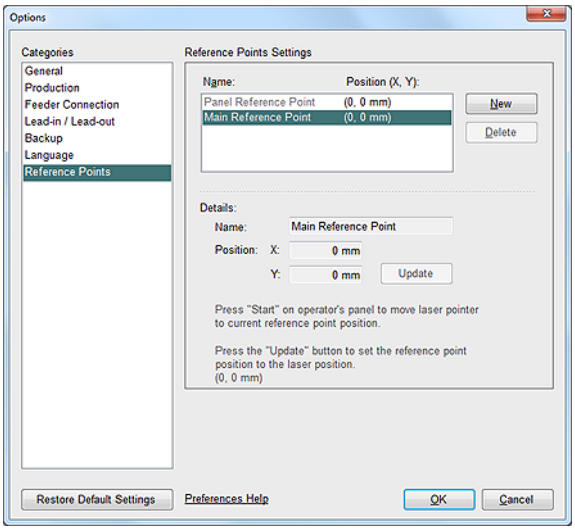
1. Your current **Windows** language is not supported by iPC.
2. You prefer to select a different language.

Select the desired language from the corresponding drop-down list and click **OK**.

Restart **iPC** to activate the new language setting.

14.8 Reference Points

Main Menu->Edit->Options...->Reference Points

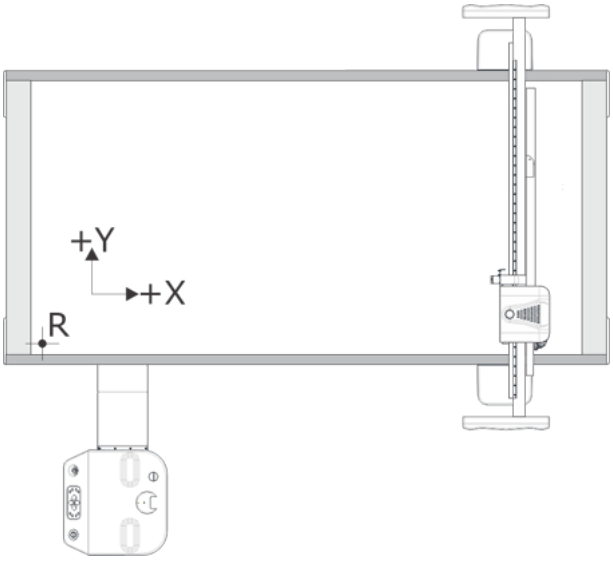


About **Reference Points**

To position a job on the table, **Reference Points** are used.

For the actual job, the selected **Reference Point** has co-ordinates X=0, Y=0.

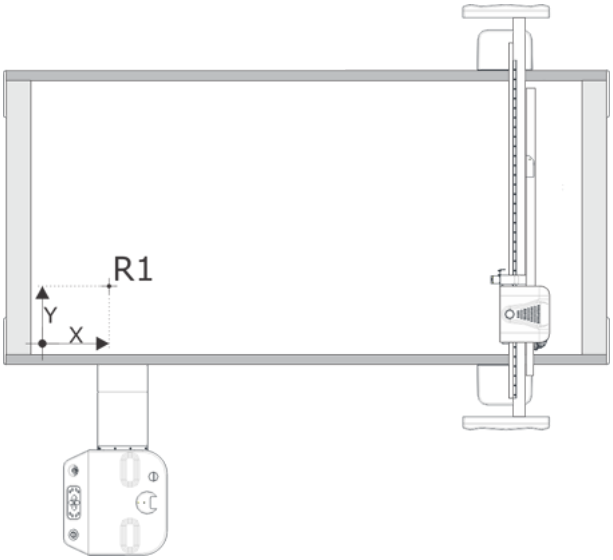
14.8.1 Main Reference Point



The **Main Reference Point** (R) is a fixed reference point on the table.

You can select it from the list of **Reference Points** in the dialog, but not modify or delete this **Reference Point**.

14.8.2 User Defined Reference Points



Create User Defined Reference Points

1. Click the **New** button to create a new **User Defined Reference Point**.
2. Enter the name of the reference point in the **Name** edit field.
3. Set the reference point position by:
   a. Enter X/Y - co-ordinates into the **Position** fields in the dialog.

      The co-ordinates are relative to the **Main Reference Point**.
   b. Click the **Update** button to set coordinates of the **Reference Point** in current **Laser Position**.

Click OK to activate the new **Reference Point** setting.

Delete a User Defined Reference Point

1. In the list of reference points, highlight the **User Defined Reference Point** you want to delete.
2. Click **Delete**.

Panel Reference Point

The **Panel Reference Point** is a special version of **User Defined Reference Points**.

It is selected from the list of reference points in the dialog.

You can set the **Panel Reference Point** in three different ways:

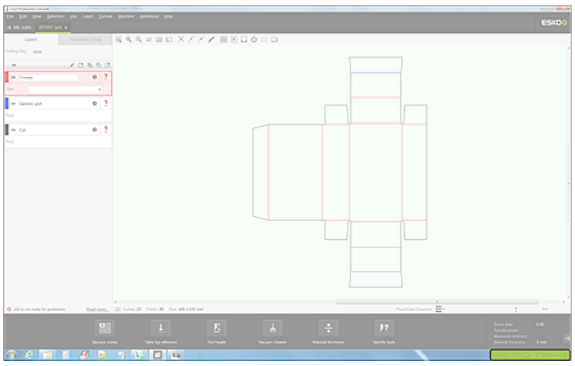
1. Enter X/Y - co-ordinates into the **Position** fields in the dialog.

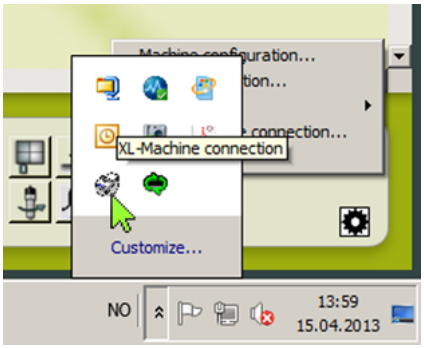
   The co-ordinates are relative to the **Main Reference Point**.
2. Click the **Update** button to set **Panel Reference Point** in current **Laser Position**.
3. Press the ***Set Ref.*** button on **Operators Panel**.

   Panel Reference Point is set to current **Laser Position**.

	Set Ref. button on C-series
	Set Ref. button on XL, XN, XE, XP, V-series

15. Machine Connection and Configuration





From **Windows Toolbar**, invoke **Machine Connection**.

The following menu items are available:

- ***Machine Configuration***
- ***Tool Configuration***
- ***Service Menu***
- ***About...***
- ***Terminate Machine Connection***

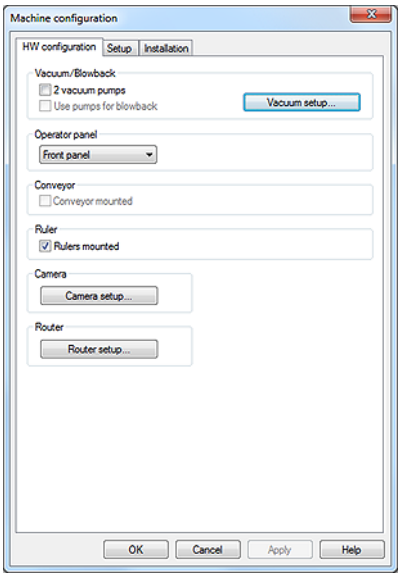
Note: These functions covers basic system settings, normally done once.

To be maintained by **Trained Personnel** only.

15.1 Machine Configuration

15.1.1 Hardware Configuration

Machine Connection->Machine Configuration->HW Configuration

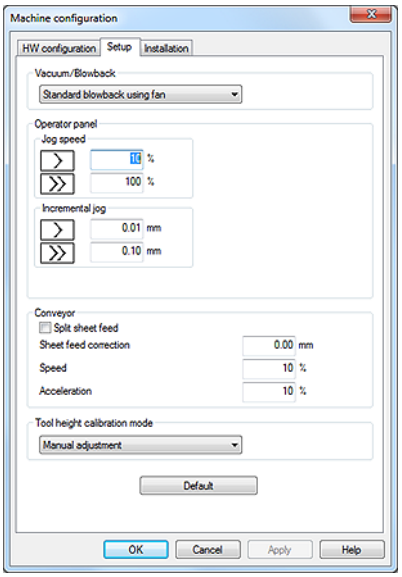


2 Vacuum Pumps Specify if this system is configured with **2 Vacuum Pumps**.	**Use Pumps for blow back** This system is configured with **2 Vacuum Pumps** and the pumps provides **blow back**.
Vacuum Setup From this dialog, select the hardware vacuum configuration you have on your **Cutting Table**; number of vacuum sections.	**Rulers Mounted** Specify if this system has **Cutting Table Rulers** mounted.
Operator Panel Specify **Operator Panel** position. This information will define **Jog direction** for the jog buttons on the **Operator Panel**.	**Camera Setup** Enter the **Camera Setup** dialog. For more information, go *here*
Conveyor Specify if this system has **Conveyor Belt**.	**Router Setup** Enter the **Router Setup** dialog.

For more information about these settings, see **User Manual for the Cutting Table.**

15.1.2 Setup

Machine Connection->Machine Configuration->Setup



Vacuum/Blow Back

Specify installed **Vacuum/Blow Back** solution.

- Standard blowback using fan

  Blow back is provided by a separate fan.

- Vacuum based blowback

  Blow back is provided by the Vacuum pump

Jog Speed

Specify low and high **Jog Speed** as a percent of maximum speed.

Incremental Jog

Specify the **Step Size** for low and high **Incremental Jog**

Split Sheet Feed

Normally, material feed is carried out as one continous movement.
Select this option to divide the material feed into two separate movements.
Useful to avoid unwanted safety breaks for certain material sizes.

Sheet Feed Correction

Add a correction value.
A positive value will increase the movement.

Conveyor Speed
Specify **Conveyor Speed** as a percent of maximum allowed speed.
For optimal feed operation, some materials requires a reduced conveyor speed.

Conveyor Acceleration
Specify **Conveyor Acceleration** as a percent of maximum allowed acceleration.
For optimal feed operation, some materials requires a reduced conveyor acceleration.

Tool height calibration mode
Select calibration mode:

- Manual adjustment - use the manual procedure for tool height calibration.
- Automatic measurement - use **X-pad** for tool height calibration

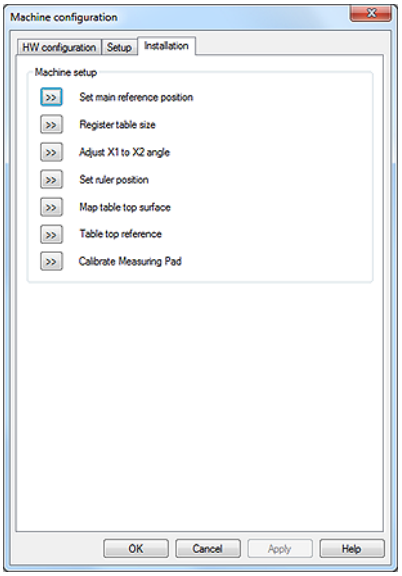
Note: this choice is relevant on machines with **X-pad** only.

Default
All parameters are set to factory default.

For more information about these settings, see **User Manual for the Cutting Table.**

15.1.3 Installation

Machine Connection->Machine Configuration->Installation



Set Main Reference Position
Invoke the **Set Reference Point** wizard.
Follow wizard instructions.
Note: Complete this function for all **Tool holders**.

Register Table Size
Invoke the **Register Table Size** wizard.
Follow wizard instructions.

Adjust X1 to X2 angle
Invoke the Adjust **X1 to X2 angle** wizard.
Follow wizard instructions.

Set Ruler Position
Invoke the Set **Ruler Position** wizard.
Follow wizard instructions.

Map Table Top Surface
Invoke the Map **Table Top Surface** wizard.
Execute on top of the **Vacuum Table**, no **Cutting Underlay** or **Conveyor Belt**.
Follow wizard instructions.

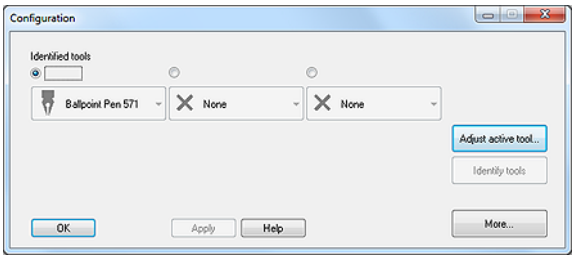
Table Top Reference
Update table top level measurement in current **Laser Pointer** position.
Measure on top of cutting underlay; no material.

Calibrate Measuring Pad
Invoke the Calibrate **Measuring Pad** wizard.
Follow wizard instructions.

For more information about these settings, see **User Manual for the Cutting Table.**

15.2 Tool Configuration

Machine Connection->Tool Configuration



Identified Tools

The tools currently mounted on the **Cutting Table** are displayed.

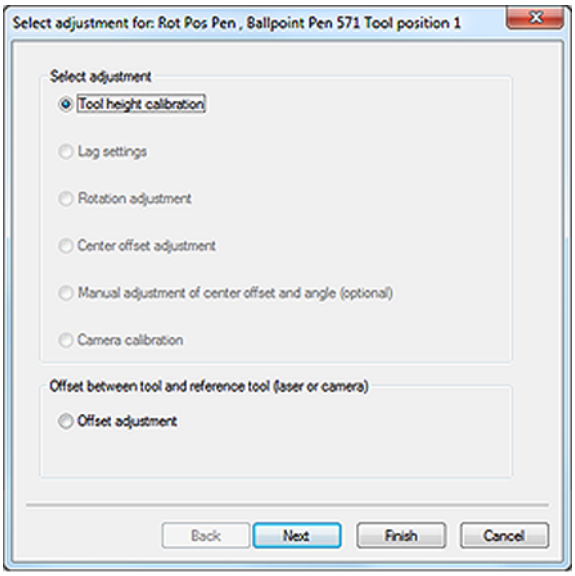
Select a Tool

By the radio buttons, select the **Tool** to update.

Identify Tools

Complete a **Tool identification** sequence.

15.2.1 Adjust Active Tool



General

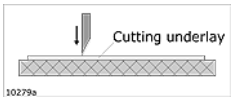
Tool adjustment is carried out using wizards.

All tools need to be adjusted in the **Tool holder** position they will be used.

We recommend to use a sheet of quality carton or corrugated to perform these wizards.

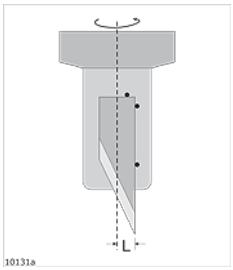
About adjustments

Tool Height



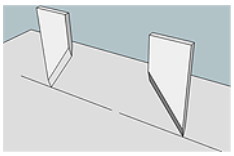
The tool tip should touch the material surface.

Lag setting



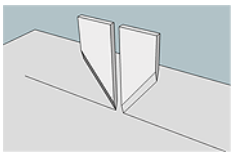
The knife lag depends upon the blade adapter.

Rotation adjustment



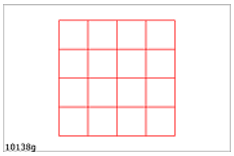
Adjust tool angle tangential to moving direction.

Center offset adjustment



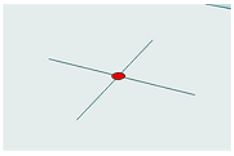
Adjust tool sideways until centered.

Camera Calibration



Compensate for camera offset and lens distortion.
For more information, go *here*.

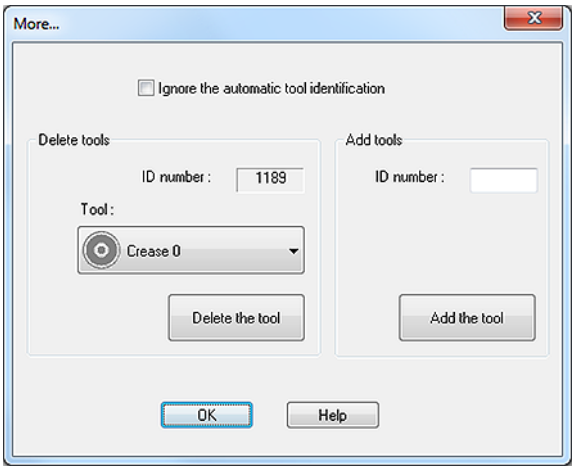
Offset Adjustment



Adjust offset relative to laser pointer.

For more information about tool adjustment, see Cutting Table User Manual.

15.2.2 More



The **More..** dialog contains selections to **Ignore**, **Delete** or **Add** to the **Tool List**.

The **Tool List** contains **Tools** that you can select for the available **Tool Positions**.

Ignore Automatic Tool Identification

Ignore Automatic Tool Identification may be used when the **Automatic Tool Detection** fails, and manual tool selection is necessary.

If **Ignore Automatic Tool Identification** is checked, **Tool Setup** remains unchanged after:

- **Table Zero Position** sequence
- **Identify Tools** function

Delete Tool

Use **Delete Tool** when a **Tool** is no longer in use.

The deleted **Tool** will no longer be available in the **Tool List** in the **Edit Layer** dialog.

Add Tool

Use **Add Tool** to

- Add new **Tools**
- Add tools that fails during **Automatic Tool Detection**

The **Tool** is added to the **Tool List**.

15.3 Camera Operations

Show Camera

Main Menu->Machine->Show Camera

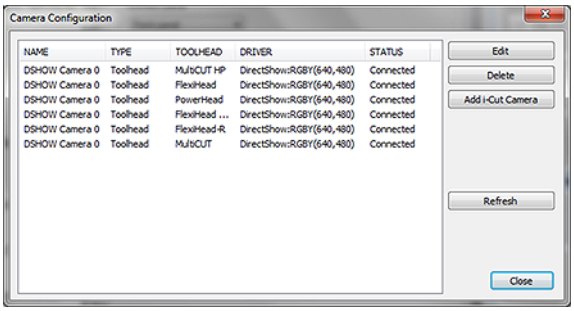
Machine Panel Toolbar->Show Camera

Camera Setup

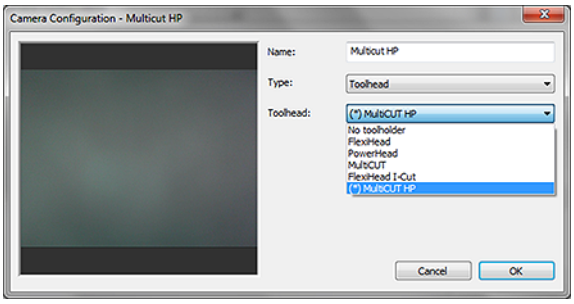
Machine Connection->Machine Configuration->HW Configuration->Camera Setup

Prerequisites:

- The camera has to be visible as an imaging device from device manager.
- Necessary camera driver has to be installed (Epix driver if i-cut camera).



- If using i-cut camera, select add i-cut camera.
- In the list of cameras, select the one currently connected
- Select **Edit**

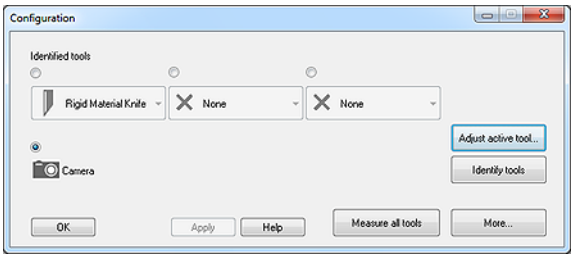


- Give the camera a proper name
- Select type of camera (**Tool head**, **In-stack**)
- Select OK to save your settings.

The connected **Tool head** is marked by a (*) in front of the name.

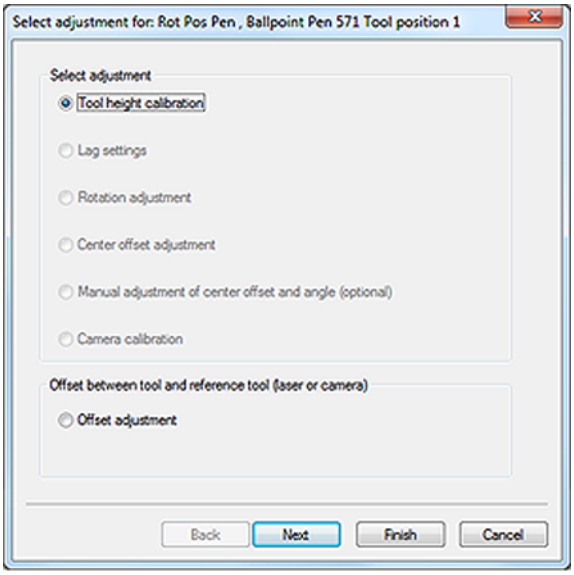
Offset Adjustment

Machine Connection->Tool Configuration->Adjust Active Tool->Offset Adjustment



Two initial steps are mandatory:

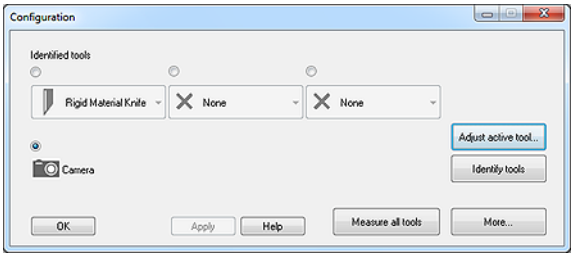
- Complete **Offset Adjustment** between **Laser pointer** and all tool positions.
- Select one tool, preferably a knife tool, as the common reference tool between **Laser pointer** and **Camera**.



Select **Offset Adjustment** and complete the wizard.

Camera Calibration

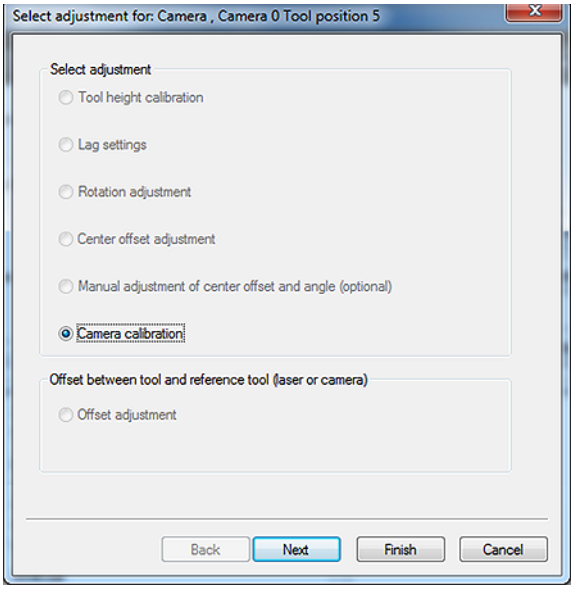
Machine Connection->Tool Configuration->Adjust Active Tool->Camera Calibration



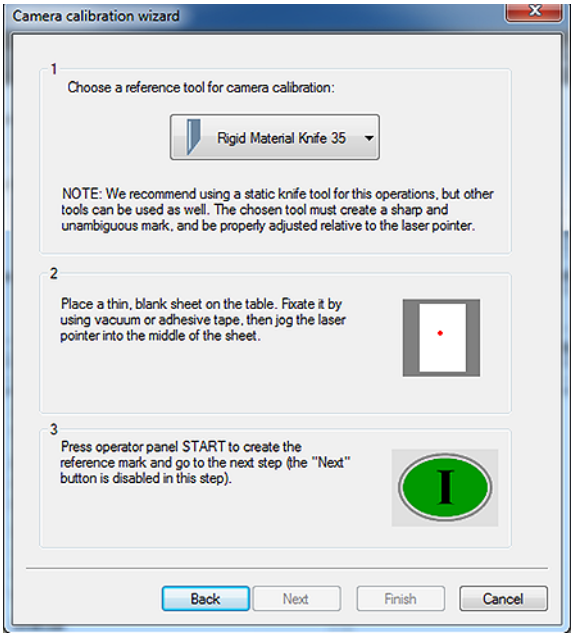
For this procedure, use the same reference tool as in previous chapter.

Select **Camera** and **Adjust active tool**

Follow the instructions given by the wizard, step by step.

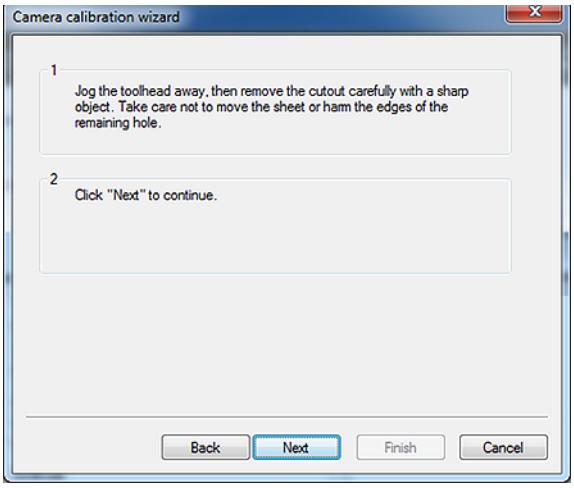


Select **Camera Calibration**.


Camera calibration wizard
1
Choose a reference tool for camera calibration:
Rigid Material Knife 35
NOTE: We recommend using a static knife tool for this operations, but other tools can be used as well. The chosen tool must create a sharp and unambiguous mark, and be properly adjusted relative to the laser pointer.
2
Place a thin, blank sheet on the table. Fixate it by using vacuum or adhesive tape, then jog the laser pointer into the middle of the sheet.
3
Press operator panel START to create the reference mark and go to the next step (the "Next" button is disabled in this step).
Back
Next
Finish
Cancel

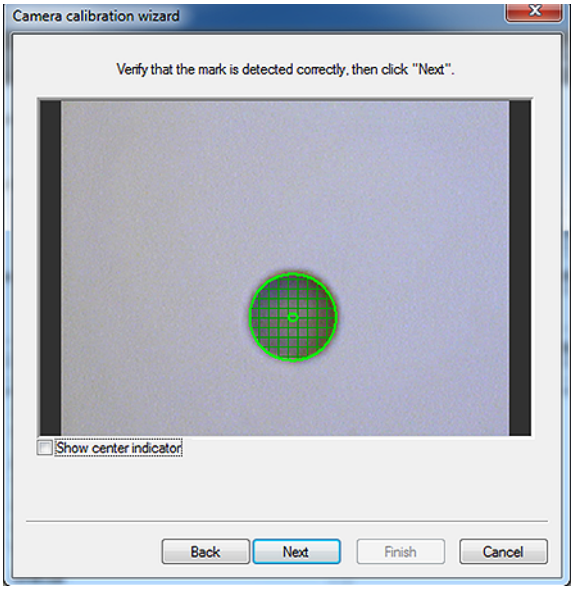
Follow the steps in the wizard:

1. Select the reference tool, preferably the same tool as used during the previous offset adjustment.
2. Place a sheet of thin material on the table.
3. Fixate the sheet using **Vacuum on**.
4. Jog the **Laser Pointer** into a proper position on the sheet.
5. Press **Start** to create the **Reference Mark**.

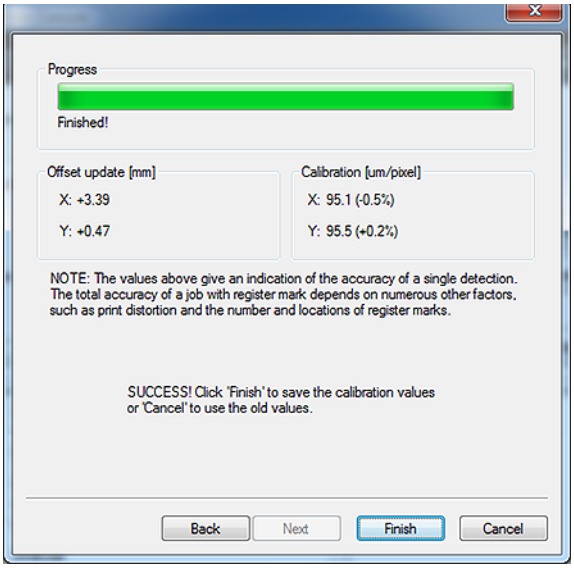

Camera calibration wizard
1
Jog the toolhead away, then remove the cutout carefully with a sharp object. Take care not to move the sheet or harm the edges of the remaining hole.
2
Click "Next" to continue.
Back
Next
Finish
Cancel

While the sheet is kept in place by vacuum on, do:

1. Jog the tool head away.
2. Carefully remove the cutout from the **Reference Mark**.
3. Press **Next**.



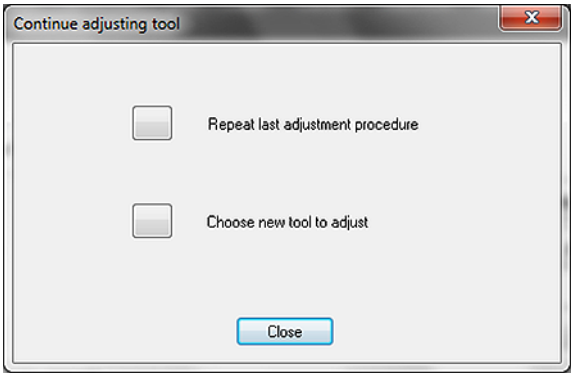
1. Verify that the mark is correctly detected.
2. Press **Next**.


Progress
Finished!
Offset update [mm]
X: +3.39
Y: +0.47
Calibration [um/pixel]
X: 95.1 (-0.5%)
Y: 95.5 (+0.2%)
NOTE: The values above give an indication of the accuracy of a single detection. The total accuracy of a job with register mark depends on numerous other factors, such as print distortion and the number and locations of register marks.
SUCCESS! Click 'Finish' to save the calibration values or 'Cancel' to use the old values.
Back
Next
Finish
Cancel

The **Camera Calibration** wizard will now complete.

Correct completion is indicated as displayed.

Press **Finish**.



Press Close to terminate the procedure.

Note: **Camera view** will be oriented according to ***Table view***.

15.4 Service Menu

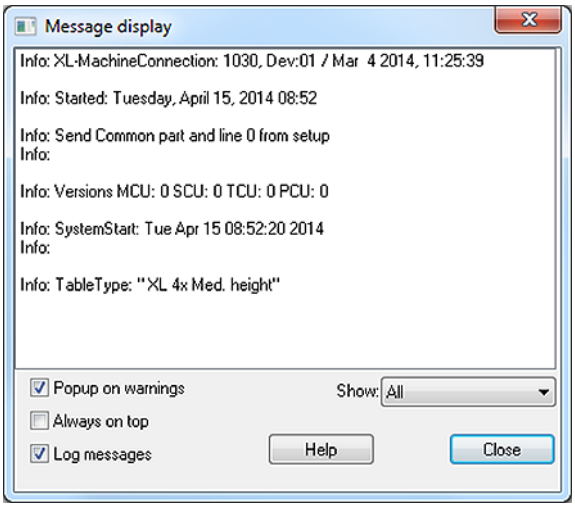
Note:

The Service Menu functions are available for certified service personnell only.

They are not aimed for table operators.

15.4.1 Message Display

Machine Connection->Service Menu->Message Display


Message display
Info: XL-MachineConnection: 1030, Dev:01 / Mar 4 2014, 11:25:39
Info: Started: Tuesday, April 15, 2014 08:52
Info: Send Common part and line 0 from setup
Info:
Info: Versions MCU: 0 SCU: 0 TCU: 0 PCU: 0
Info: SystemStart: Tue Apr 15 08:52:20 2014
Info:
Info: TableType: "XL 4x Med. height"
Popup on warnings
Show: All
Always on top
Log messages
Help
Close

Popup on Warnings

Select if you want the **Message Display** window displayed for each warning message.

Error messages are always displayed.

Always on Top

Select if you want the **Message Display** on top of your **Desktop**.

Log Messages

When enabled, all messages are logged for later examination.

Useful for trouble shooting.

Show

Specify at what level messages are shown:

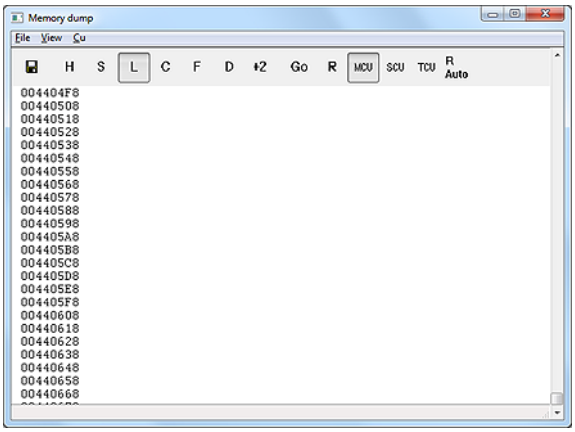
- **All** - all kind of messages are displayed.
- **Important Only**
- **Critical Only**

15.4.2 Memory Dump

Machine Connection->Service Menu->Memory Dump

Invoke the **Memory Dump** application.

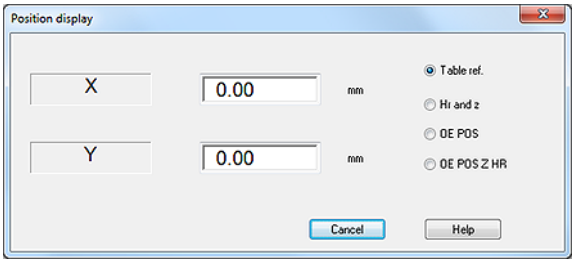
To be used for **Software Maintenance**.



For more information, see **Hwtest User Manual**

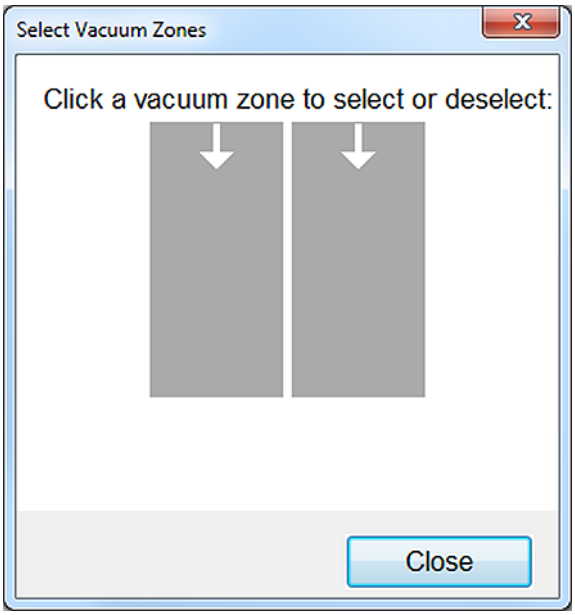
15.4.3 Position Display

Machine Connection->Service Menu->Position Display



For more information, see **User Manual for Cutting Table** .

15.4.4 Show vacuum dialog



Select Vacuum Sections suitable for **Selected Job**.

Note: This dialog is available from: **Machine Panel Toolbar->Vacuum Sections**

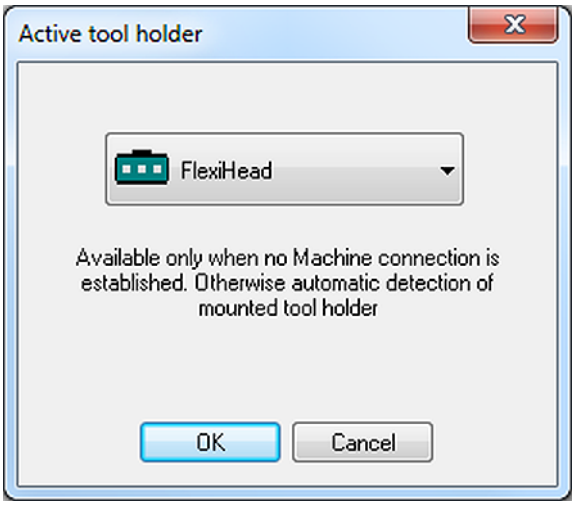
15.4.5 Emulate Panel

Machine Connection->Service Menu->Emulate Panel

A function for **Software Maintenance**.

15.4.6 Tool holder Select

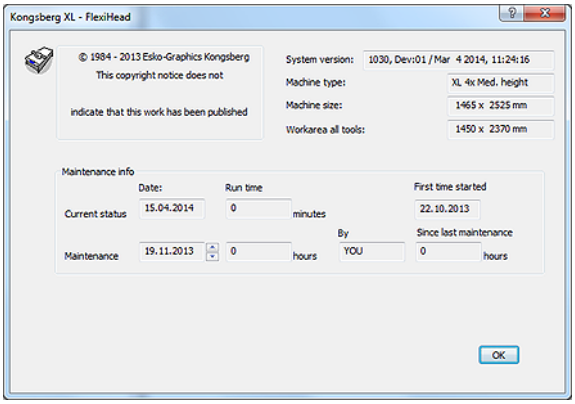
Machine Connection->Service Menu->Tool Holder Select


Active tool holder
FlexiHead
Available only when no Machine connection is established. Otherwise automatic detection of mounted tool holder
OK
Cancel

Select **Tool holder** for test.

This function is available when iPC is dis-connected from **Cutting Table** only.

15.5 About ...



System Version Version number and date of the installed software.	**Machine Size** Machine size as obtained by the **Register Table Size** function
Machine Type Type name of connected **Cutting Table**.	**Work Area all Tools** Nominal **Work Area** available for all tools in the currently mounted **Tool holder**.

15.5.1 Maintenance Info

Current Status

Date Todays date.	**First Time Started** Date when the system was running for the first time.
Run Time Total number of hours the machine has been running (executing).	

Maintenance

Date Date when last maintenance was carried out.	**By** Initials of the person who completed last maintenance.
Run Time Hour counter when last maintenance was carried out.	**Since Last Maintenance** Number of execution hours since last maintenance.

15.6 Terminate Machine Connection

Use this function to terminate the connection to the **Cutting Table**.

15.7 Logging

15.7.1 General

Bug report

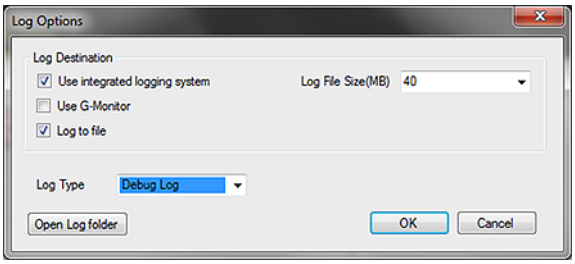
A bug report should consist of:

- A detailed, step by step description of what happened.
- If found at a customer site also a confirmation that the bug can be reproduced in the lab.
- Sometimes a description of the expected behavior will also be a help.
- A .zip file of the log folder, with at least the files:

- i-cut Production Console.log
- iPcDeveloperLog.txt Last KB ACM file.log
- Last KB Mat file.log
- MCDeveloperLog.txt.

15.7.2 Log Settings

Ctrl + Alt + Shift + L



From this dialog, specify the logg level.

For log settings to take effect, restart iPC.

The default setting will always be **Service Log**.

Initiating a log should be carried out only if requested by Esko personnel.

Procedure

To invoke logging:

In the **Log Settings** dialog, check **Use integrated logging system** and **Log to file**.

To reduce the size of the log file, please do as little as possible:

- Start iPC.
- Do the test and nothing else.
- Stop iPC.
- Zip the log folder and copy to your server.

Notes:

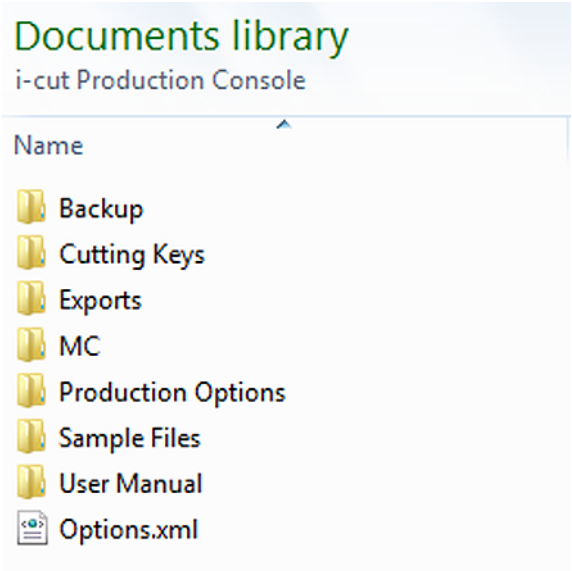
- Log type **Debug** or **Trace** will seriously affect performance and must be used for short periods of time.
- Never leave a machine in any other setting than **Service Log**.

16. Install Software

For information about software installation, see the **Installation Manual** for the actual machine. Available on the Documentation DVD.

16.1 File Save Structure

Computer->xxx->My Documents->i-cut Production Console



This is the default file save structure.

Backup

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Production Options

Sample Files

User Manual

17. About Licenses

iPC has three main licenses.

i-cut Production Console Sign

Sign license is the main license that covers all features in iPC software.

i-cut Production Console Packaging Production

Packaging Production license cover all main topics for production, but less functionality regarding edit, milling and camera distortion compensations.

i-cut Production Console Basic

Basic license cover only basic functions. No camera functions.

Feature	Basic	Pack Prod	Sign Std	Sign Prod	Details
Base	x	x	x	x	Enable all base functionality including start of application
Line_edit		x	x	x	Enable all manual geometry editing. Basic version will be "read only", like XL-Guide
Avoid_overcut			x	x	Enable layer feature to automatically split lines and change cut directions, mainly for printed materials
Registration_and_placement		x	x	x	Enable edge / regmark reg. and placement (position / rotation) compensation. Registration device is HW dependant
Barcode		x		x	Enable use of camera for reading barcodes, which enables automated workflow. Barcode scanner always supported
Linear		x	x	x	Enable linear and differential scale
Non_linear			x	x	Enable non linear (full) distortion compensation
Intelligent Marks			x	x	Enable Adaptive registration
Non Stop		x		x	Enable more than 1 copy (table) productions
Milling			x	x	Enable advanced milling features like lead in/out, multipass, washout, tool diameter compensation
Add_Nested_Layout		x	x	x	Enable dialog for merging designs onto same board based on bounding boxes or manual positioning
Step_and_repeat	x	x	x	x	Enable step and repeat the "i-cut way"

18. Keyboard Shortcuts

Alt + Click	**Select All Curves**
Alt + Left **Alt + Right** **Alt + Up** **Alt + Down**	**Jog Selected Curve(s)**
CTRL + -	**Zoom Out**
CTRL + +	**Zoom In**
CTRL + 0	**Fit to Data**
CTRL + A	**Select All Curves**
CTRL + Alt + Shift + L	**Log Options**
CTRL + Alt + M	**Maintenance Interval update**
CTRL + C	**Copy Layer(s)**
CTRL + D	**Deselect All Curves**
CTRL + L	**Add Layer**
CTRL + M	**Move Selected Curves**
CTRL + N	**New File**
CTRL + O	**Open File**
CTRL + S	**Save File**
CTRL + Shift + A	**Select All Layers**
CTRL + Shift + C	**Copy Layer(s) with Curves**
CTRL + Shift + D	**Deselect All Layers**
CTRL + Shift + I	**Invert Curve Direction**
CTRL + Shift + J	**Fit to Job**
CTRL + Shift + M	**Mirror Selected Curves**
CTRL + Shift + R	**Rotate Selected Curves**
CTRL + Shift + S	**Save File As**
CTRL + Shift + T	**Fit to Table**
CTRL + T	**Scale Selected Curves**
CTRL + U	**Remove Unused Layers**
CTRL + W	**Close File**
CTRL + Z	**Undo**
Delete	**Remove Selected Curves**
F1	**Help**
Shift + Delete	**Remove Layers**

19. iPC Commands

Use **iPC Commands** to prepare:

- ***Direct Commands***

Conveyer belt Speed and Acceleration (%SSA) Syntax: %SSA <speed> <acceleration>. Command to limit belt speed and acceleration. Values are percentage of maximum.	**Sheet Feed (%SHF)** Syntax: %SHF <distance> <start position> Command to move the conveyer belt the specified distance. Start position is optional. Value specified in 1/1000 mm.
i-cut Delay (I-SD) Syntax: I-SD <time>; Execution is delayed <time> msec.	**Sheet Feeder Communication On (I-FM 1)** Syntax: I-FM 1; Sheet feeder communication enabled.
i-cut Message (I-MS) Syntax: I-MS <message>. Dispaly a <message> to the Operator.	**Sheet Feeder Communication Off (I-FM 0)** Syntax: I-FM 0; Sheet feeder communication disabled.
i-cut Park (I-PK) Syntax: I-PK. Move to **Park Position**.	**Vacuum pump, start and stop of (%PMP)** Syntax: %PMP <on/off>. Command to turn the vacuum pump on and off.
Reference Point selection(%SRE) Syntax: %SRE<1>/<X>. Switches between main fixed reference point (1) and panel defined reference point (X)	**Vacuum suction direction control (%SUC)** Syntax: %SUC<on/off>. Switches between suction (on) and Quick Release / Blow Back (off)

20. Using ai-cut/i-cutCDR

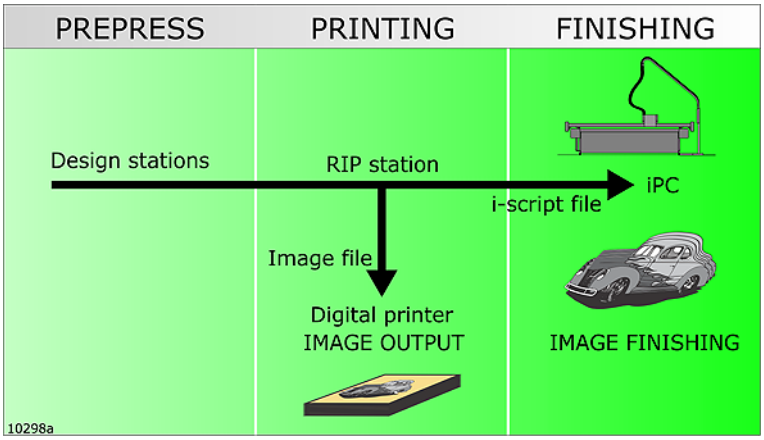
ai-cut is an addon to Adobe Illustrator.

i-cutCDR is an addon to Corel Draw versions X3, X4 and X5.

These addons provides tools to automatically add iPC Register Marks to designs.

For more information, see separate User Manuals.

21. i-script



In a traditional workflow, image data and cut data are generated as separate files out from the Design station.

i-script is a workflow where image data and cut data are separated in the RIP process.

The big advantage is that modifications made during the RIP process are maintained both for the image data and the cut data.

i-script is adapted by leading RIP and printer producers.